

Columbia, Mo.

Read what Governor Stone and Governor  
Stephens say about Endowing the  
University. Pages 2-7

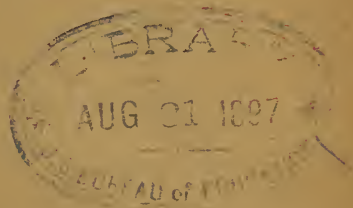
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# CATALOGUE

OF THE

## UNIVERSITY OF THE STATE OF MISSOURI



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FIFTY-FIFTH REPORT

OF THE

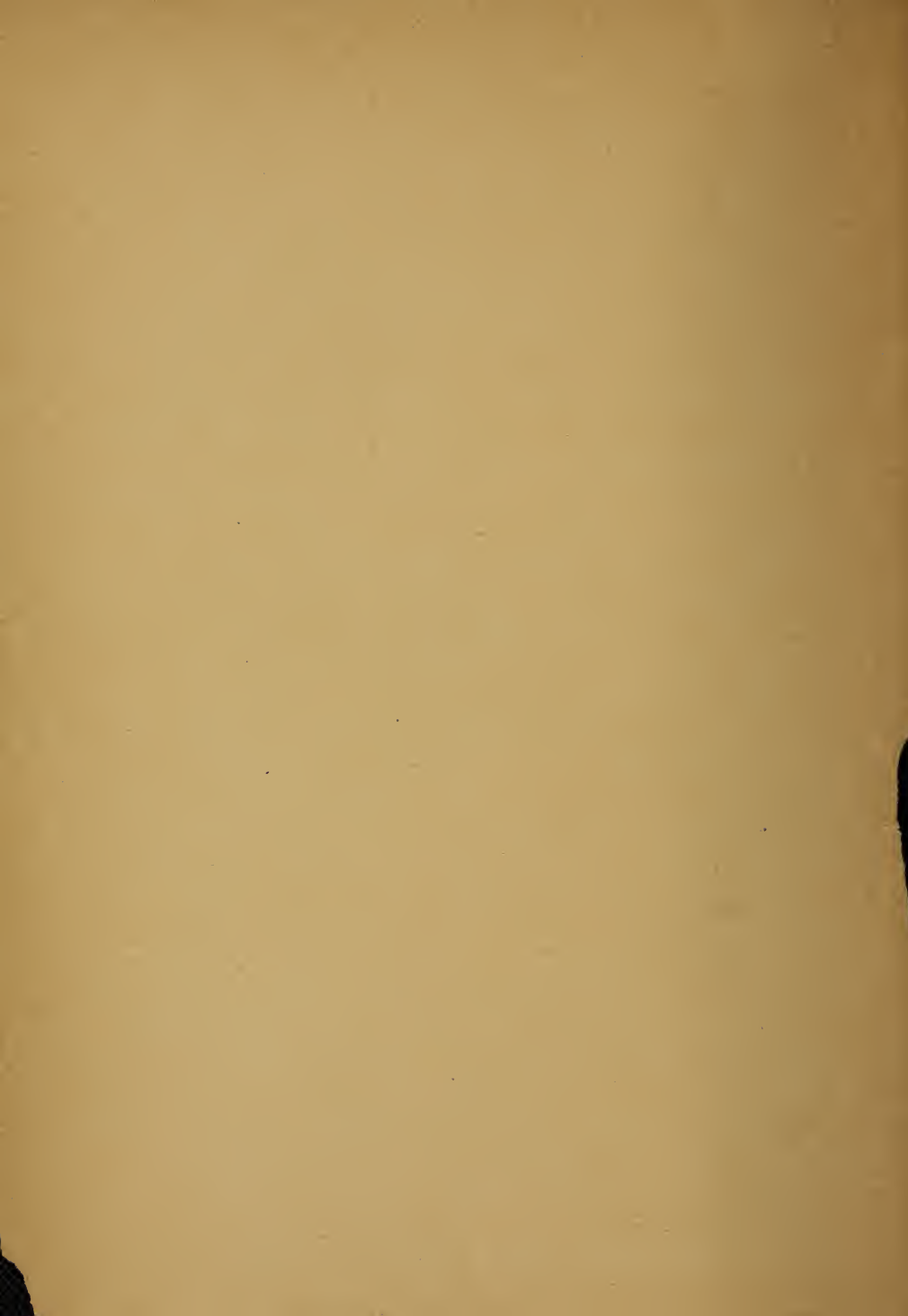
### CURATORS

*To the Governor of the State*

AUG 30 1897

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1896--1897.



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### CURATORS

*To the Governor of the State*

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1896--1897

COLUMBIA, MISSOURI

| 1897       |    |    |    |    |    |    |  | 1898      |    |    |    |    |    |    |  |            |    |    |    |    |    |    |  |
|------------|----|----|----|----|----|----|--|-----------|----|----|----|----|----|----|--|------------|----|----|----|----|----|----|--|
| JULY.      |    |    |    |    |    |    |  | JANUARY.  |    |    |    |    |    |    |  | JULY.      |    |    |    |    |    |    |  |
| S          | M  | T  | W  | T  | F  | S  |  | S         | M  | T  | W  | T  | F  | S  |  | S          | M  | T  | W  | T  | F  | S  |  |
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| 4          | 5  | 6  | 7  | 8  | 9  | 10 |  | 2         | 3  | 4  | 5  | 6  | 7  | 8  |  | 3          | 4  | 5  | 6  | 7  | 8  | 9  |  |
| 11         | 12 | 13 | 14 | 15 | 16 | 17 |  | 9         | 10 | 11 | 12 | 13 | 14 | 15 |  | 10         | 11 | 12 | 13 | 14 | 15 | 16 |  |
| 18         | 19 | 20 | 21 | 22 | 23 | 24 |  | 16        | 17 | 18 | 19 | 20 | 21 | 22 |  | 17         | 18 | 19 | 20 | 21 | 22 | 23 |  |
| 25         | 26 | 27 | 28 | 29 | 30 | 31 |  | 23        | 24 | 25 | 26 | 27 | 28 | 29 |  | 24         | 25 | 26 | 27 | 28 | 29 | 30 |  |
| ..         | .. | .. | .. | .. | .. | .. |  | 30        | 31 | .. | .. | .. | .. | .. |  | 31         | .. | .. | .. | .. | .. | .. |  |
| AUGUST.    |    |    |    |    |    |    |  | FEBRUARY. |    |    |    |    |    |    |  | AUGUST.    |    |    |    |    |    |    |  |
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| 8          | 9  | 10 | 11 | 12 | 13 | 14 |  | 6         | 7  | 8  | 9  | 10 | 11 | 12 |  | ..         | 1  | 2  | 3  | 4  | 5  | 6  |  |
| 15         | 16 | 17 | 18 | 19 | 20 | 21 |  | 13        | 14 | 15 | 16 | 17 | 18 | 19 |  | 7          | 8  | 9  | 10 | 11 | 12 | 13 |  |
| 22         | 23 | 24 | 25 | 26 | 27 | 28 |  | 20        | 21 | 22 | 23 | 24 | 25 | 26 |  | 14         | 15 | 16 | 17 | 18 | 19 | 20 |  |
| 29         | 30 | 31 | .. | .. | .. | .. |  | 27        | 28 | .. | .. | .. | .. | .. |  | 21         | 22 | 23 | 24 | 25 | 26 | 27 |  |
| ..         | .. | .. | .. | .. | .. | .. |  | ..        | .. | .. | .. | .. | .. | .. |  | 28         | 29 | 30 | 31 | .. | .. | .. |  |
| SEPTEMBER. |    |    |    |    |    |    |  | MARCH.    |    |    |    |    |    |    |  | SEPTEMBER. |    |    |    |    |    |    |  |
| ..         | .. | .. | 1  | 2  | 3  | 4  |  | ..        | .. | 1  | 2  | 3  | 4  | 5  |  | ..         | .. | .. | .. | 1  | 2  | 3  |  |
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| 12         | 13 | 14 | 15 | 16 | 17 | 18 |  | 13        | 14 | 15 | 16 | 17 | 18 | 19 |  | 11         | 12 | 13 | 14 | 15 | 16 | 17 |  |
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| 26         | 27 | 28 | 29 | 30 | .. | .. |  | 27        | 28 | 29 | 30 | 31 | .. | .. |  | 25         | 26 | 27 | 28 | 29 | 30 | .. |  |
| OCTOBER.   |    |    |    |    |    |    |  | APRIL.    |    |    |    |    |    |    |  | OCTOBER.   |    |    |    |    |    |    |  |
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| 10         | 11 | 12 | 13 | 14 | 15 | 16 |  | 10        | 11 | 12 | 13 | 14 | 15 | 16 |  | 9          | 10 | 11 | 12 | 13 | 14 | 15 |  |
| 17         | 18 | 19 | 20 | 21 | 22 | 23 |  | 17        | 18 | 19 | 20 | 21 | 22 | 23 |  | 16         | 17 | 18 | 19 | 20 | 21 | 22 |  |
| 24         | 25 | 26 | 27 | 28 | 29 | 30 |  | 24        | 25 | 26 | 27 | 28 | 29 | 30 |  | 23         | 24 | 25 | 26 | 27 | 28 | 29 |  |
| 31         | .. | .. | .. | .. | .. | .. |  | ..        | .. | .. | .. | .. | .. | .. |  | 30         | 31 | .. | .. | .. | .. | .. |  |
| NOVEMBER.  |    |    |    |    |    |    |  | MAY.      |    |    |    |    |    |    |  | NOVEMBER.  |    |    |    |    |    |    |  |
| ..         | 1  | 2  | 3  | 4  | 5  | 6  |  | ..        | .. | .. | .. | .. | .. | .. |  | ..         | .. | 1  | 2  | 3  | 4  | 5  |  |
| 7          | 8  | 9  | 10 | 11 | 12 | 13 |  | 1         | 2  | 3  | 4  | 5  | 6  | 7  |  | 6          | 7  | 8  | 9  | 10 | 11 | 12 |  |
| 14         | 15 | 16 | 17 | 18 | 19 | 20 |  | 8         | 9  | 10 | 11 | 12 | 13 | 14 |  | 13         | 14 | 15 | 16 | 17 | 18 | 19 |  |
| 21         | 22 | 23 | 24 | 25 | 26 | 27 |  | 15        | 16 | 17 | 18 | 19 | 20 | 21 |  | 20         | 21 | 22 | 23 | 24 | 25 | 26 |  |
| 28         | 29 | 30 | .. | .. | .. | .. |  | 22        | 23 | 24 | 25 | 26 | 27 | 28 |  | 27         | 28 | 29 | 30 | .. | .. | .. |  |
| ..         | .. | .. | .. | .. | .. | .. |  | 29        | 30 | 31 | .. | .. | .. | .. |  | ..         | .. | .. | .. | .. | .. | .. |  |
| DECEMBER.  |    |    |    |    |    |    |  | JUNE.     |    |    |    |    |    |    |  | DECEMBER.  |    |    |    |    |    |    |  |
| ..         | .. | .. | 1  | 2  | 3  | 4  |  | ..        | .. | .. | 1  | 2  | 3  | 4  |  | ..         | .. | .. | .. | 1  | 2  | 3  |  |
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| 12         | 13 | 14 | 15 | 16 | 17 | 18 |  | 12        | 13 | 14 | 15 | 16 | 17 | 18 |  | 11         | 12 | 13 | 14 | 15 | 16 | 17 |  |
| 19         | 20 | 21 | 22 | 23 | 24 | 25 |  | 19        | 20 | 21 | 22 | 23 | 24 | 25 |  | 18         | 19 | 20 | 21 | 22 | 23 | 24 |  |
| 26         | 27 | 28 | 29 | 30 | 31 | .. |  | 26        | 27 | 28 | 29 | 30 | .. | .. |  | 25         | 26 | 27 | 28 | 29 | 30 | 31 |  |



# UNIVERSITY CALENDAR.

## AT COLUMBIA.

|       |  |                                     |
|-------|--|-------------------------------------|
| 1897— | September 9, 10, 11, 13.....                 | Entrance Examinations               |
|       | September 14, Tuesday.....                   | All Departments Open                |
|       | November 24, Wednesday, 4 p. m., to November |                                     |
|       | 29, Monday, 8:30 a. m.....                   | Thanksgiving Holidays               |
|       | December 14, Tuesday.....                    | Semi-annual meeting of the Curators |
|       | December 23, Thursday, at 4 p. m., to }      | Christmas Holidays                  |
| 1898— | January 4, Tuesday, at 8:30 a. m. .... }     |                                     |
|       | January 9, Sunday.....                       | Memorial Day                        |
|       | January 21-29 .....                          | Mid-Year Examinations               |
|       | February 1, Tuesday.....                     | Second Semester Begins              |
|       | February 22, Tuesday .....                   | Holiday                             |
|       | May 27 to June 4.....                        | Final Examinations                  |
|       | June 4, Saturday.....                        | Stephens Medal Contest              |
|       | June 5, Sunday.....                          | Baccalaureate Sermon                |
|       | June 6, Monday.....                          | Class Day                           |
|       | June 7, Tuesday.....                         | Alumni Day                          |
|       | June 7, Tuesday.....                         | Annual Meeting of the Curators      |
|       | June 8, Wednesday.....                       | Commencement Day                    |

## AT ROLLA.

|       |                                     |                                       |
|-------|-------------------------------------|---------------------------------------|
| 1897— | September 13, Monday, 9 a. m.....   | Entrance Examinations                 |
|       | September 14, Tuesday.....          | First Term Begins                     |
|       | November 25, Thursday.....          | Thanksgiving Holiday                  |
|       | December 24, Friday, at 12 m., to } | Christmas Holidays                    |
| 1898— | January 3, Monday..... }            |                                       |
|       | January 3, Monday.....              | Second Term Begins                    |
|       | February 22, Monday....             | Holiday                               |
|       | March 20, Monday.....               | Third Term Begins                     |
|       | June 14, Tuesday.....               | Annual Meeting of Executive Committee |
|       | June 15, Wednesday.....             | Commencement                          |

# CONTENTS.

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|  | Page    |
|--|---------|
| GENERAL STATEMENT—Calendar.....  | 11- 111 |
| Report of the Board of Curators.....   | 1- 7    |
| Corporation.....   | 8       |
| General Faculty.....   | 9- 13   |
| Officers, Preachers and Lecturers.....   | 13- 14  |
| GENERAL INFORMATION.....   | 15- 37  |
| A. AT COLUMBIA.....  | 15- 35  |
| Historical Statement.....  | 15      |
| Buildings and Equipment.....   | 15- 18  |
| Lectures, Recitations and Religious Exercises.....   | 18      |
| Provisions for Young Women.....  | 19      |
| Directions for new Students.....   | 20      |
| Regulations regarding studies.....   | 20      |
| Expenses.....  | 22      |
| Degrees and Certificates.....  | 24      |
| Prizes.....  | 25      |
| Sources of Aid.....  | 26- 28  |
| Physical Culture.....  | 28      |
| Societies.....   | 28- 31  |
| Gifts to the University.....   | 32- 35  |
| B. AT ROLLA.....   | 35- 37  |
| Buildings and Equipment.....   | 35- 36  |
| Expenses, etc.....   | 36      |
| DEPARTMENT STATEMENTS—   |         |
| I. ACADEMIC—Faculty.....   | 38- 40  |
| Requirements for Admission.....  | 40- 43  |
| Entrance Examinations.....   | 43- 44  |
| Approval of Schools.....   | 45- 53  |
| Scheme of Courses.....   | 53- 56  |
| Courses of Study in detail.....  | 57- 74  |
| English, 57; Latin, 59; Greek, 60; Classical Archæology, 61; Romance Languages, 62; Germanic Languages, 63; History, 64; Political Economy, 65; Philosophy, 65; Mathematics, 66; Astronomy, 67; Physics, 69; Chemistry, 70; Geology, 71; Biology, 72; Elocution, 74. |         |

|   | Page     |
|---|----------|
| II. NORMAL—Faculty.....   | 75- 77   |
| Elementary course.....  | 77       |
| Advanced course.....  | 78- 79   |
| Teachers' courses.....  | 79       |
| III. LAW—Faculty.....   | 80       |
| Admission.....  | 80- 83   |
| Courses.....  | 83- 84   |
| Texts.....  | 84       |
| Graduate Course.....  | 84       |
| Degrees and Honors.....   | 86- 87   |
| Announcements.....  | 87- 88   |
| IV. MEDICINE—Faculty.....   | 89       |
| Admission.....  | 90       |
| Course.....   | 90- 91   |
| Course in detail.....   | 91- 94   |
| Degrees, etc. ....  | 94       |
| V. MILITARY—Announcement.....   | 95- 99   |
| VI. COLLEGE OF AGRICULTURE AND MECHANIC ARTS ...                        | 100- 145 |
| Faculty .....   | 100- 103 |
| Historical Statement .....  | 103- 104 |
| A. School of Agriculture .....  | 105- 125 |
| Faculty.....  | 105- 107 |
| Admission.....  | 107      |
| Schemes of courses.....   | 107- 111 |
| Courses in detail .....   | 112- 125 |
| Agriculture, 112; Horticulture, 115; Entomology, 118; Agricultural      |          |
| Chemistry, 119; Veterinary Science, 119; Mechanic Arts, 120; Draw-      |          |
| ing, 121; Commercial Studies, 121; Military Science, 122; English, 123; |          |
| Political Economy, 123; Mathematics, 123; Physics, 124; Chemistry,      |          |
| 124; Botany, 125; Geology, 125; Climatology, 125.                       |          |
| B. School of Mechanic Arts.....   | 126- 127 |
| Statements .....  | 126- 127 |
| C. School of Engineering.....   | 127- 136 |
| Faculty.....  | 127- 128 |
| Admission.....  | 129      |
| Courses .....   | 129      |
| Degrees.....  | 129      |
| Courses in detail.....  | 130- 136 |
| (a) Civil Engineering .....   | 130- 132 |
| (b) Surveying.....  | 132      |
| (c) Electrical Engineering.....   | 132- 133 |
| (d) Mechanical Engineering.....   | 134- 136 |

|   | Page     |
|---|----------|
| D. School of Mines (at Rolla) .....           | 136- 142 |
| Faculty.....                                  | 136- 137 |
| Statement .....                               | 137      |
| Admission.. .....                             | 137      |
| Courses .....                                 | 138      |
| Degrees.....                                  | 138      |
| Courses in detail .....                       | 139- 142 |
| (a) Mining Engineering.....                   | 139- 140 |
| (b) Civil Engineering.....                    | 139- 140 |
| (c) Chemistry and Metallurgy.....             | 139- 140 |
| (d) Special Courses.....                      | 140- 141 |
| (e) Graduate Courses .....                    | 141      |
| (f) Academic.....                             | 141- 142 |
| E. Experiment Station.....                    | 142- 145 |
| VII. GRADUATE DEPARTMENT....                  | 146- 152 |
| Admission (Academic Graduate Courses).....    | 146      |
| Degrees (Academic).....                       | 146- 147 |
| Courses .....                                 | 147- 152 |
| LIST OF STUDENTS AND GRADUATES.....           | 153- 174 |
| I. LISTS OF STUDENTS .....                    | 153- 167 |
| Academic Department.....                      | 153      |
| Normal Department.. .....                     | 157      |
| Law Department.....                           | 158      |
| Medical Department.. .....                    | 160      |
| College of Agriculture and Mechanic Arts..... | 161      |
| Summaries .....                               | 167- 170 |
| II. LISTS OF GRADUATES FOR 1895-6.....        | 171- 174 |
| At Columbia. ... ..                           | 171      |
| At Rolla.....                                 | 174      |
| APPENDIXES—                                   |          |
| I. Summer Schools.....                        | 175      |
| II. Yeater Bill.....                          | 183      |
| INDEX.....                                    | 187      |

## Omissions and Corrections.

1. Courses in Ancient and Mediæval History will be offered by the President of the University.
2. The entrance conditions in the Normal Department (pages 75-79) are the same as in the Academic Department (pages 41-43).
3. Page 34: Gifts "to the Law Observatory" should be "to the *Laws* Observatory."

# Report of the Board of Curators.

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To his excellency, LON. V. STEPHENS, *Governor of Missouri:*

DEAR SIR: We have the honor to to transmit herewith the annual catalogue of the University of Missouri.

## ATTENDANCE.

The enrollment of students since the issue of the catalogue for last year is as follows:

|                  |     |                             |
|------------------|-----|-----------------------------|
| At Columbia..... | 701 | a gain over last year of 21 |
| At Rolla.....    | 104 | “ “ “ “ “ 32                |
| Total. ....      | 805 | 53                          |

There has been a small increase in the teaching force at Columbia; none at Rolla.

## IMPROVEMENTS.

The most important improvement of the year has been in the laboratory facilities afforded the department of Horticulture in the completion of the Greenhouse. Few universities have opportunities for the study of Horticulture that are superior to ours; none in the Mississippi Valley except Washington University with its Shaw's Garden.

The appointment of a Professor of Elocution and of a Professor of Bacteriology and Pathology supply serious deficiencies, and will be approved by all.

## PROSPECT FOR THE CURRENT BIENNIAL PERIOD.

Although it will be impossible to expand the scope of the University in any direction, all the standard courses will be maintained, and there will be no necessity for retrogression in any important respect.

## SUMMER SCHOOL.

In the Summer School, Teachers' courses will be offered this year in Physics, Biology, Normal Training, and Horticulture. The attendance in this school has been greatly increased. The first summer it was 30; the second summer it was 80. This summer we hope for 150.

## DIPHThERIA ANTITOXIN.

It has been deemed expedient to abandon the production of diphtheria antitoxin. Means do not allow us to continue this valuable work.

## EXAMINER OF SCHOOLS.

It is hoped that it will not be necessary to discontinue the services of the Examiner of Schools. Supt. John R. Kirk is emphatic in expressing the hope that the examiner be retained.

## YEATER SCHOLARSHIPS.

It should be known in every county of the State that the Yeater Scholarship law has not only been sustained in Court, but that it has been amended in accordance with the wishes of its author. There is at present one scholarship in every County and two in the City of St. Louis. The number will be increased as the funds increase.

Henceforth the Corporation taxes collected at Jefferson City are to be distributed to all the Counties of the State in proportion to their representation in the House of Representatives, i. e., in proportion to population. This will work in favor of those Counties which otherwise would get little benefit from the law. More than half of these scholarships are still vacant. Students in every County should make inquiry at Columbia as to vacancies, and the requirements on the part of applicants.

The scholarships are for the benefit of poor young men and women who cannot command the money to meet the expense of a College Course. Persons of means, or those whose fathers have means, are not eligible, and should not apply.

A Yeater Scholarship secures free tuition and an allowance in cash, depending on the income of the State Scholarship Fund in the hands of the County Court, but not exceeding ten dollars per month for ten months in a year. The scholarships are valid in all departments of the University at Columbia and at Rolla.

The Scholarship Funds come not only from corporation taxes, but from licenses to manufacture and sell patent medicines and from collateral succession taxes. (See Appendix II.)

## NEW CADET LAW.

By an amendment the number of cadetships was doubled, thereby making the total possible number 352.

The following pages give in detail the organization and work of every department. The Faculties are worthy of all confidence, and the students are assured of good treatment and good training. The University deserves well of the State, and should be a source of pride to all its people.

## ENDOWMENT OF THE UNIVERSITY.

The following is an extract from the last report of the Curators to the Governor:

"A fixed proportion (one-third of the revenue) is always set aside for the benefit of the common schools; a similar arrangement can be extended

to the University. The amount proposed is a very moderate one, much less than is regularly set aside by many of the States in the Union; and the method is one that is extremely popular wherever it is tried. It removes the question of appropriations for the University from the arena of rival and opposing claims, and it insures, in the most dignified manner, an adequate income for the support of higher education. The taxable property of the State is at present about one billion dollars, consequently the annual appropriation recommended would amount at present to about \$166,666.67. This amount should include all appropriations for the School of Mines. As the wealth of the State increases, the amount set aside for the University would increase as well, and properly so, because the University must of necessity increase in size and in completeness with the growth of the State. The State of Michigan, whose educational zeal and eminence are well known, sets aside one-sixth of a mill, as is proposed above; and in addition to that it appropriates money from time to time for the erection of new buildings. Besides Missouri, there is scarcely a western State that does not provide in this way for its University. Wisconsin and Nebraska set aside a larger proportion.

"This recommendation is respectfully presented to the intelligent people of Missouri. It is perfectly evident that the University of the State will be what the State makes it. It cannot rise above the standard set by the people. If it is to be a crown of glory and a perpetual blessing, it must be nourished and strengthened and enlarged with increasing years. It must be in no sense a bone of contention or the cause of petty jealousy; its policy must be stable; its revenues must be sure, and its promises must be faithfully kept. None of these things can be if the public favor is uncertain, and if the appropriations are to be endangered by sectional or partisan jealousies. It is our earnest hope that the next General Assembly will remove the question of properly supporting the State University from the arena of public and local politics, and place it securely on the platform of those high interests whose support is ensured through the action of a just and unfailing rule."

The following recommendations, respecting the State University, of Gov. Stone in his last message and of Gov. Stephens in his first message to the Legislature of Missouri, are in perfect accord. They should make an epoch in the history of higher education in our State, and should call forth hearty praise from every advocate of enlightened progress.

Extracts from the message of Hon. Wm. J. Stone, Governor of Missouri, to the Thirty-ninth General Assembly at Jefferson City, on Friday, January 8, 1897:

"We now have laid the foundation of a great University—but we have little more than that. If the Institution is liberally supported by the people and wisely managed by those in charge of it, we can soon build up here



in our imperial State the greatest University in the southwestern section of the Union. I should regard that consummation as one of the proudest achievements within our reach—one that would reflect the highest honor and redound in the greatest benefits to the people. Aside from the natural and patriotic desire all of us should feel to supply our sons and daughters with the best possible educational facilities, the presence of a superb and famous University in the State would do more, perhaps, than any other one thing to lift the State into universal esteem and attract to it the favorable notice of mankind. It will not do to say that the University is not the school of the poor boy, or that it is not now what it ought to be. As a matter of fact, a majority of the University students are the sons and daughters of those denominated as the common people. But if it were true that the children of the poor do not for any reason enjoy to any large extent the advantages of the institution, then their opportunities for enjoying them should be made easier. It more often happens than otherwise that those who rise to great and deserved prominence in the State or nation, and who add the greatest luster to their country's history, have come from what are regarded as the humbler walks of life. There are hundreds of boys and girls whose possibilities of usefulness and greatness cannot be estimated, if they were only given opportunities for full development. Our common and intermediate schools are indispensable. They perform a noble work and should be supported with unstinted generosity. But those schools cannot take the place of the University. The University is the final training school where those prepared for admission to it are rounded out and specially equipped for successful labor in the fields of their choice. It should be supported in a broad and catholic spirit, provided with every needed facility, and administered along such practical lines as will strengthen and build it up, so that none desiring its advantages will be denied them. If it is not now such a school as it ought to be, we should, on that account, strive all the more to make it what we would have it. Somewhere in the Southwest and in the near future, a splendid University will rise—one that will shine resplendent above all rivals. Illinois, Iowa, Kansas, Nebraska and Texas are all fighting for this distinction. When success is once achieved it will be hard to wrest the laurel from the victor. Unquestioned supremacy once obtained is apt to be permanent. Missouri holds the key to the situation, and, if we but utilize our advantage, we can win the prize. If we are to succeed, the people must take hold of the University with a firm but affectionate hand and lift it right up beyond the reach of danger, and send it forward with that confident strength that overwhelms opposition and makes victory sure.

"The University cannot be properly, even decently, supported out of the present revenues and in accordance with the present methods of making appropriations without detriment to other important interests. The truth is, this institution ought to be taken out of the general squabble for appro-



prations which occurs at every regular session of the General Assembly, and be provided with a permanent and sufficient income of its own. The sum which can now be set apart out of the general revenue for the University is grossly and shamefully inadequate to answer its just demands. It ought to be sustained from a permanent fund. It should not only be spared the humiliation of becoming a biennial mendicant, but it should be placed in a position of absolute independence. Many of the States now levy a special tax or set apart by law a certain per cent. of their aggregate revenues for their Universities, varying in amount from one-fifth to one-twelfth of one mill per annum on every dollar of assessments or collections. This is done in Ohio, Indiana, Illinois, Wisconsin, Minnesota, Michigan, Kansas, Nebraska, California, and perhaps other States. In Missouri the University gets what it can out of what some have not inaptly designated as 'the general scramble.' Why should not our University be treated with as much consideration as are those of other States? Not long since the Hon. John R. Kirk, Superintendent of Public Instruction, recommended that the General Assembly should set apart for the benefit of the University an equivalent of one-sixth of a mill per annum upon every dollar of the assessed value of the taxable property of the State; and in support of his recommendation he expressed the hope that if that policy should be adopted it would 'remove the question of properly supporting the University from the arena of public and local politics, and place it securely on the platform of those high interests whose support is secured through the action of a just and unfailing rule.' If that recommendation should be agreed to, it would result in creating an annual revenue of about \$165,000, based on present valuations. The sum realized from such a tax would, of course, increase from year to year with the increase of valuations; but that would be as it should, for the necessities of the institution would increase with the growth of the State. In the general spirit and object of this recommendation, and in its wisdom as a policy, I most heartily concur; but whether it could be entered upon at this time, without making provision for additional sources of revenue, is questionable, because of the amount it would absorb out of the aggregate. However, the suggestion is one that can be made practicable by enlarging the revenues, and I earnestly invoke your attention to it with the hope that it may be regarded with favor."

Extracts from the Inaugural Address of Hon. Lon V. Stephens, Governor of Missouri, delivered before the Thirty-ninth General Assembly, at Jefferson City, January 11, 1897:

"No interest in Missouri should be more carefully guarded or more vigorously promoted than her public school system. Her schools should all be encouraged by wise legislation and supported, as they have always been, by ample appropriations. The State University, which is the cap sheaf of our public school system, is entitled to, and will, doubtless, receive at your

hands that consideration which it has always received, and which will enable it to take front rank among the institutions of America. If the necessity ever existed for a Missouri youth to leave his own State for education, it should be removed by such judicious fostering of our own institution as will not only keep our boys and girls at home, but will draw to Missouri the ambitious of other states. I have conferred with Governor Stone, and I have read that portion of his message concerning the endowment fund for the University. I approve of the suggestions he makes to you on this subject."

In a Special Message sent in February, 1897, to the 39th General Assembly earnestly advocating the endowment of the University His Excellency, Governor Stephens, says:

"Under its present conditions the revenue of the University from endowments from the United States Treasury (known as the 'Morrill Fund') and from fees and rents, amounts to about \$102,000 per year. The current expenses of maintenance, including the proper and inevitable growth of libraries and laboratories, and a reasonable margin for putting up special buildings, as outlined in the biennial report just issued, exceeds this amount by at least \$100,000....."\*

"As the fifth state in the Union, Missouri cannot afford to take a step backward, nor are we willing to stand still in this fight for the higher education of our children when the states adjoining us are doing as much for theirs....."

Finally if our University is to keep pace with other State Universities, and if Missouri means to offer her children on her own soil as good education as is offered by other States, she must give her University in some form adequate permanent endowment for maintenance and support and must provide buildings and equipment with greater liberality than has been shown in the immediate past. Our University cannot hold its own in the race for pre-eminence when other States are much more liberal in their appropriations. The accuracy of the figures given below can be easily verified. For the biennial period ending December 31, 1896, the income for two years of the following State Universities was as follows: Michigan \$800,000; Wisconsin \$770,000; Minnesota \$700,000; California \$660,000; Illinois \$550,000; Ohio \$504,000; Pennsylvania (estimated) \$1,000,000. All these are State Universities. Some three years ago a bill was introduced into the Legislature of Michigan increasing more than three times the annual tax for the maintenance and support of the University. Not more than three votes in House and Senate combined were cast against the measure. About a year ago the Ohio Legislature voted by a large majority to double the annual tax for the maintenance and support of her University. Last winter

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\*An attentive reading of this paragraph shows that the Governor means \$100,000 a year, or \$200,000 for each biennial period.

the Legislature of California passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, which had, in addition to said tax, an interest-bearing endowment of more than four millions of dollars, and had recently received from private individuals promises of more than four millions of dollars for new buildings. Therefore, although the University had four millions of dollars in interest bearing funds, and had received offers of four millions of dollars from private individuals for new buildings, and was receiving from the state for current expenses \$200,000 for each biennial period, the Legislature, in the midst of hard times, passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, so that it should yield thenceforth for each biennial period \$400,000. The assessed valuation of property in Missouri is almost exactly what it is in California. It is not our business in the annual catalogue to advertise the glories of other states and other Universities, but it is our duty to tell our own people plainly, that if better provision is not made for their University, it will become a by-word and a reproach when compared with those of other states, and that the youth of our State must receive at home inferior educational advantages or must go over the borders of this commonwealth to Universities that are liberally supported by other states. Kansas, Wisconsin and Illinois are very close, and Lincoln, Nebraska (the seat of the University), is within two hours' ride of northwestern border of Missouri.

WM. M. EADS,

B. R. CAUTHORN,

*Executive Board of Curators.*

COLUMBIA, MO., April 28th, 1897.

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The Board of Curators and the Faculty reserve the right to withdraw, without further notice, any course of instruction offered in this catalogue, if circumstances should render such withdrawal necessary.

# CORPORATION.

## THE BOARD OF CURATORS.

|                       |                  |                             |
|-----------------------|------------------|-----------------------------|
| †NAT. M. SHELTON..... | Lancaster .....  | } Term expired Jan. 1, 1897 |
| †WM. M. EADS.....     | Carrollton.....  |                             |
| R. B. OLIVER.....     | Jackson .....    | } Term expires Jan. 1, 1899 |
| G. B. ROLLINS .....   | Columbia .....   |                             |
| JAS. T. MOORE .....   | Lebanon.....     |                             |
| GARDNER LATHROP ..... | Kansas City..... | } Term expires Jan. 1, 1901 |
| B. R. CAUTHORN.....   | Mexico.....      |                             |
| M. E. BENTON.....     | Neosho .....     |                             |
| JOHN D. VINCIL.....   | St. Louis.....   | Term expires Jan. 1, 1903   |

### OFFICERS OF THE BOARD.

|                      |                |
|----------------------|----------------|
| .....                | President      |
| NAT. M. SHELTON..... | Vice-President |
| J. G. BABB,          | R. B. PRICE,   |
| Secretary.           | Treasurer.     |

### THE EXECUTIVE BOARD AT COLUMBIA.

|                     |            |
|---------------------|------------|
| B. R. CAUTHORN..... | Mexico     |
| WM. M. EADS .....   | Carrollton |

### THE EXECUTIVE COMMITTEE OF THE SCHOOL OF MINES.

|                             |                              |
|-----------------------------|------------------------------|
| R. B. OLIVER, Chairman..... | Jackson                      |
| M. E. BENTON.....           | Neosho                       |
| JAS. T. MOORE .....         | Lebanon                      |
| M. F. FAULKNER,             | D. W. MALCOLM,               |
| Secretary.                  | Treasurer (office at Rolla). |

## THE BOARD OF VISITORS.

|                        |                       |
|------------------------|-----------------------|
| CHARLES E. YEATER..... | Sedalia               |
| C. B. CORUM.....       | Boonville             |
| WALLACE ESTILL.....    | Estill, Howard county |
| J. N. BALLARD.....     | Montrose              |
| W. C. ALLDREDGE.....   | California            |

†Successors not yet appointed.

# Faculty of the University.

Names are printed in order of appointment, except that of the President.

Those marked with a star [\*] are names of members of the Faculty of the School of Mines and Metallurgy, at Rolla, Missouri.

---

RICHARD HENRY JESSE, LL. D.,

*President, and Professor of Ancient and Medieval History.*

PAUL SCHWEITZER, Ph. D.,

*Professor of Agricultural Chemistry.*

ANDREW WALKER MCALESTER, A. M., M. D.,

*Professor of Surgery and Diseases of Women and Children.*

WOODSON MOSS, M. D.,

*Professor of Anatomy and Practice of Medicine.*

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

*Professor of Mathematics.*

JOHN CARLETON JONES, A. M., Ph. D.,

*Professor of Latin Language and Literature, and Dean of the Academic Department.*

EDWARD ARCHIBALD ALLEN, Litt. D.,

*Professor of English Language and Literature.*

HENRY CAPLES PENN, A. M.,

*Assistant Professor of English Language and Literature.*

GARLAND CARR BROADHEAD, M. S.,

*Emeritus Professor of Geology and Mineralogy, and Curator of Geological Museum.*

JAMES AULL YANTIS, LL. B.,

*Professor of Law.*

MILLARD LEWIS LIPSCOMB, A. M.,

*Professor of Physics.*

\*WALTER B. RICHARDS, M. A.,

*Director of School of Mines and Metallurgy, and Professor of Mathematics.*

ALEXANDER MARTIN, A. M., LL. D.,

*Professor of Law, and Dean of the Law Faculty.*

WILLIAM GWATHMEY MANLY, A. M.,

*Professor of Greek Language and Literature.*

MILTON UPDERGRAFF, M. S., B. C. E.,

*Professor of Astronomy, Director of the Observatory, and Assistant Professor of Mathematics.*

JOSEPH PHILIP BLANTON, A. M.,

*Professor of Theory and Practice of Teaching.*

†JOHN MILLER BURNAM, Ph. D.,

*Assistant Professor of Latin Language and Literature.*

CHRISTIAN WILLIAM MARX, B. E.,

*Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.*

JOHN WALDO CONNAWAY, M. D. C., M. D.,

*Professor of Physiology (Human and Comparative).*

\*ELMO GOLIGHTLY HARRIS, C. E.,

*Professor of Civil Engineering.*

JOHN DAVISON LAWSON, B. C. L., LL. D.,

*Professor of Law.*

†FREDERICK CHARLES HICKS, B. A., Ph. D.,

*Professor of History and Political Economy.*

JOHN PICKARD, A. M., Ph. D.,

*Professor of Classical Archaeology, Assistant Professor of Greek, and Curator of Museum of Classical Archaeology.*

FRANK THILLY, B. A., Ph. D.,

*Professor of Philosophy.*

HARRY THOMAS CORY, M. M. E., M. C. E.,

*Professor of Civil Engineering.*

LUTHER MARION DEFOE, A. B.,

*Assistant Professor of Mathematics.*

HOWARD AYERS, B. S., Ph. D.,

*Professor of Biology, and Curator of the Biological Museum.*

JOHN CHARLES WHITTEN, B. S.,

*Professor of Horticulture.*

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†Absent for session of 1896-7.

\*COURTNEY DEKALB,

*Professor of Mining and Metallurgy.*

\*ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,

*Professor of Physics.*

SINDEY CALVERT, B. Sc., A. M.,

*Assistant Professor of Chemistry.*

WALTER ALONZO THURSTON (First Lieutenant, U. S. Army),

*Professor of Military Science and Tactics.*

HENRY JACKSON WATERS, B. A. S.,

*Dean of the College of Agriculture and Mechanic Arts, and Director of the Experiment Station.*

ISIDOR LOEB, M. S., LL. B., Ph. D.,

*Acting Professor of History and Political Economy.*

BENJAMIN FRANKLIN HOFFMAN, M. L.,

*Professor of Germanic Languages.*

FREDERICK BLAKMAR MUMFORD, M. S.,

*Professor of Agriculture, and Curator of the Agricultural Museum.*

HENRY MARVIN BELDEN, B. A., Ph. D.,

*Assistant Professor of English Language and Literature.*

JOHN MOORE STEDMAN, B. Sc.,

*Professor of Entomology, and Entomologist to the Experiment Station.*

GEORGE WASHINGTON CUTLER, M. D.,

*Professor of Physical Culture, and Director of the Gymnasium.*

\*EUGENE THOMAS ALLEN, A. B., Ph. D.,

*Professor of Chemistry.*

RAYMOND WEEKS, A. M.,

*Professor of Romance Languages.*

MATTHEW B. HAMMOND, Ph. B., M. L.,

*Acting Assistant Professor of Political Economy.*

WILLIAM GEORGE BROWN, B. S., Ph. D.,

*Professor of Chemistry.*

JOHN RUTLEDGE SCOTT, A. M.,

*Professor of Elocution.*

HOWARD BURTON SHAW, B. C. E., A. M.,

*Assistant Professor of Electrical Engineering.*



WILLIAM VAN ALLEN CATRON, A. M.,

*Acting Assistant Professor of Latin Language and Literature.*

B. MEADE BOLTON, M. D.,

*Professor of Bacteriology and Pathology.*

\*PAUL JULIUS WILKINS, B. S.,

*Instructor in Academic Department, and Librarian.*

SILAS DINSMOOR, A. B.,

*Instructor in Chemistry.*

\*THOMAS LEWIS RUBEY, A. M.,

*Instructor in Academic Department, and Secretary to the Faculty.*

ARTHUR HARRINGTON PLACE, C. E.,

*Instructor in Drawing.*

WILLIAM WALTER GRIFFITH, B. S.,

*Instructor in Physics.*

CURTIS FLETCHER MARBUT, B. S., A. M.,

*Instructor in Geology and Mineralogy.*

MARY ESTELLE PORTER, B. L.,

*Instructor in Commercial Studies.*

\*GEORGE EDWARD MILLER, B. S.,

*Instructor in Shop-work and Drawing.*

ELLIOTT JEFFRIES MASON, B. S.,

*Instructor in Mechanic Arts.*

CHARLES HENRY THOMPSON, B. S.,

*Instructor in Botany.*

MARION WEST,

*Instructor in Physical Culture.*

\*PAUL ARMSTRONG LARSH,

*Assistant in Chemical Laboratory.*

EDGAR E. BRANDON, A. B.,

*Teaching Fellow in Romance Languages.*

FRANCIS POTTER DANIELLS, A. B.,

*Teaching Fellow in Latin.*



INEZ RIGGS, M. L.,  
*Teaching Fellow in Germanic Languages.*

EDWARD BEAUFORD CAUTHORN, B. S.,  
*Teaching Fellow in Mathematics.*

#### SUMMARY.

|   |       |
|---|-------|
| Professors (including President and Deans) in actual service..... | 38    |
| Assistant Professors.....   | 10    |
| Instructors.....  | 11    |
| Teaching Fellows .....  | 4     |
| Laboratory Assistant.....   | 1     |
|   | <hr/> |
| Counted twice.....  | 2     |
| Total.....  | 62    |

#### OTHER OFFICERS.

J. G. BABB, A. M., LL. B.,  
*Proctor.*

R. B. PRICE,  
*Treasurer.*

IRVING SWITZLER,  
*Registrar, Secretary to the Council and the various Faculties, and to the Experiment Station.*

J. M. WHITE, A. B.,  
*Examiner of Schools.*

MISS MARION WEST,  
*Acting Matron.*

MISS MARY IGLEHART,  
*Stenographer.*

JOHN WATSON MONSER,  
*Librarian.*

GEO. J. B. DOUGLASS,  
*Superintendent Unsold College Lands.*

For officers and staff of Experiment Station, see Index.

## PREACHERS AND LECTURERS.

## PREACHERS TO THE UNIVERSITY.

|   |  |
|---|--|
| Prof. H. L. Willets, Ph.D., Chicago.....              | September 10-12, 1896.                         |
| Rev. W. T. Moore, D.D., Columbia.....                 | { September 14-19, 1896.<br>April 19-26, 1897. |
| Rev. J. M. Barron, D.D., Baltimore.....               | September 21-26, 1896.                         |
| Rev. H. M. Wharton, D.D., Baltimore.....              | Sept. 28-Oct. 3, 1896.                         |
| Bishop D. S. Tuttle, St. Louis.....                   | December 20, 1896.                             |
| Rev. Wm. Frost Bishop, Ph.D., Liberty.....            | January 5-11, 1897.                            |
| Rev. F. G. Tyrrell, St. Louis.....                    | February 3-6, 1897.                            |
| Bishop E. R. Hendrix, D. D., Kansas City.....         | February 14, 1897.                             |
| The pastors of churches in Columbia at various times. |  |

## LECTURES BEFORE THE UNIVERSITY.

## College of Agriculture and Mechanic Arts:

Hon. J. R. Rippey, of Columbia, Mo., Secretary Missouri State Board of Agriculture, "The Missouri Roadster—His Conformation, Breeding and Management."

Hon. N. F. Murray, of Oregon, Mo., Vice President State Horticultural Society, "The Production of Nursery Stock." Twenty-four lectures and 12 laboratory exercises.

Hon. L. A. Goodman, of Westport, Mo., Secretary State Horticultural Society, "Commercial Orcharding and Small Fruit Growing." Twenty-four lectures and 12 laboratory exercises.

Frank Ambs, Esq., of St. Louis, Mo., "Market Gardening and Hot-bed Forcing." Twenty-four lectures and twelve laboratory exercises.

Mr. E. W. Major, of St. Anthony Park, Minn., "Practical Dairy Management." Twenty lectures and 18 laboratory exercises in butter and cheese making.

Hon. John Patterson, of Kirksville, Mo., President State Dairymen's Association, "Dairying in Missouri." Six lectures.

Dr. T. E. White, of Columbia, Mo., State Veterinarian, "The Spread of Contagious Diseases and the State Quarantine Regulations." Twenty lectures.

A. E. Hackett, Esq., of Columbia, Mo., Assistant Director Missouri Climate and Crop Service, "Climatology." Twenty lectures.

## GENERAL INFORMATION.

### Historical Statement:

The University was located at Columbia, Boone county, June 24, 1839. The cornerstone of the Main building was laid July 4, 1840, and this is generally accepted as the date of the *foundation* of the University. Courses of instruction in Academic work were begun on April 14, 1841. A Normal department was established in 1867. The College of Agriculture and Mechanic Arts and the School of Mines and Metallurgy were made departments of the University in 1870—the School of Mines and Metallurgy being located at Rolla. The Law department was opened in 1872; the Medical department in 1873; and the Engineering department in 1877. The Experiment station was established, under act of Congress, in 1888. The Missouri State Military School was created a department of the University in 1890. In 1868 the State gave aid for the first time to the University—a sum of \$10,000. On January 9, 1892, the main building of the University at Columbia was destroyed by fire. In the following March the Legislature gave for building and equipment \$236,577. In March, 1893, this fund was increased by a second appropriation of \$264,000, and by \$25,000 additional for a new building at Rolla.

For a more detailed statement about the College of Agriculture and Mechanic Arts, see Index.

### A. THE DEPARTMENTS AT COLUMBIA.

#### Organization and Government:

The University Council consists of the President, the Deans, Professors, and Assistant Professors, in all the Departments of the University. It is the highest organized body of the Faculty. Each Department of the University has its special Faculty, consisting of the Professors and other Teachers who give instruction in it.

The President is the executive head of the University, and is a member of all the Faculties.

#### Buildings and Equipments:

*Location.*—The University of the State of Missouri is located near the center of the State, in Columbia, a town of about 5,000 inhabitants, situated half way between St. Louis and Kansas City. The surrounding country is elevated, well drained and diversified. It is a limestone region, remarkable for its healthfulness. The University Campus includes 32 acres of un-

duating ground in the southern part of the town. The experiment farm lies one square south of the Campus, and comprises 768 acres. The Horticultural grounds (a part of the farm) are one square from the Campus, and include about 30 acres.

*Buildings.*—The University has the following buildings:

The Observatory, Medical building, four Club-houses, Agricultural Farm buildings, Experiment station, Greenhouse (new), Law building (new), Chemical laboratory (new), President's house (1867), Museum (new), Agricultural College (1871), Engineering (new), Mechanic Arts (new), Power-house (new), Academic Hall (new).

We give a brief description of our *new* buildings:

The Law building, 68×114 feet, contains two stories and a basement. Its library rooms are large and well lighted.

The Chemical laboratory, 132×90 feet, is equipped with a system of exhaust ventilation capable of effecting a change of air every ten minutes.

The museum, 140×100 feet, contains in the center the Museum proper, 37×100 feet, two stories high, and entirely fire-proof. On the right is the department of Geology and Mineralogy, and on the left that of Botany and Zoology. These wings have six and eight rooms respectively, one of which is a large lecture hall, 28×40 feet.

The Engineering building, 145×78 feet, is arranged for Physics, and for Civil, Mechanical, and Electrical Engineering. It has 32 rooms, in addition to two lecture halls, 28×40 feet.

The Mechanic Arts building, 108×117 feet, has six shop-rooms, 40×40 feet; an exhibit hall, 25×40 feet; two offices, 16×18; one drawing room, 40×40; store-rooms, an engine-room, etc. The machinery is driven by a 60-horse power Corliss engine supplied with steam from the Power-house. The building is lighted from a dynamo in the basement, and is thoroughly ventilated by a fan.

The Power-house, 72×86 feet, contains a plant of five boilers aggregating 600-horse power. From this plant all the buildings are heated by a system of brick tunnels six and a half feet high by four broad. Through these tunnels are carried steam and water pipes and electric light wires.

The new Horticultural Laboratory consists of a central building 30×30 feet and two wings, each 22×30 feet. It is heated by steam, and is so arranged that each compartment maintains a different temperature. Thus it is possible to grow plants that require various degrees of heat. The boiler-house is a separate building, of such size and arrangement that additional steam may be put in for heating three or four times the present area under glass. The entire laboratory is constructed after approved modern methods. It has stone foundation below ground, pressed brick walls to a height of three feet, T iron frame filled in with white pine, grooved sash bars, and best American A glass. The glass walls of the main portion rise eight feet above the brick, and the roof slopes upward to twenty-seven feet

above the ground floor in the center, giving room for tall tropical plants. The walks between the benches are of granitoid.

The new Academic Hall, 319 feet long, with a chapel in one wing and a library in the other, contains three stories, besides a basement seven feet above ground. It is provided with appliances for direct and indirect heating, with fans for ventilation, and with thermostats for the regulation of temperature. The auditorium, 74×113 feet, seats comfortably 1,500 people. The apartments (six in number) for the exclusive use of young women contain everything conducive to study, comfort, and indoor exercise.

A new club-house for students will be built in the summer of 1897. In heat, light, ventilation, steadiness of temperature, convenience, and comfort it will be made a model dormitory.

The principal buildings of the University are grouped around a quadrangle near the center of the Campus. The quadrangle is open toward the north, with department buildings on the sides, and the large Academic Hall closing the south end. The buildings are substantially built of red pressed brick, with stone trimmings. They have division walls of brick, roofs of slate, ceilings of cement laid on steel laths, and floors of tile or of polished maple. They are heated by steam, lighted by gas and electricity, and are all supplied with water by the city water-works. The University has built at its own expense an admirable system of sewers.

*Libraries.*—The General University Library consists of about 23,139 bound volumes, carefully selected, and 31,860 unbound pamphlets and reports. The best literary and scientific periodicals are taken, and a large number are given yearly (see Index, under “Gifts to the University”). The Law Library, of about 4,000 volumes, is in the Law building. The Medical Library receives regularly a number of medical periodicals. Moreover, each Chair has its special technical library.

*Laboratories and Museums.*—Facilities for practical instruction in the sciences are provided in the museums of Zoology, Geology, and Agriculture, and in various laboratories. The University has now in regular use twenty laboratories of science and technology, and four drawing-rooms, one general and three special. The laboratories are as follows:

**CHEMISTRY:** Four Laboratories—General Chemistry (1st year), Qualitative Analysis, Quantitative Analysis, Agricultural Chemistry and Experiment Station work.

**PHYSICS:** Three Laboratories—For work of different grades, besides small rooms for special work.

**MINERALOGY AND GEOLOGY:** Two Laboratories.

**ASTRONOMY:** A well equipped Observatory for practical instruction and observation on the part of the students. See Index, under “Observatory.”

**BIOLOGY:** Two Laboratories—One for General Biology, and one for advanced work of various grades.

ENTOMOLOGY: One Laboratory.

PHYSIOLOGY: One Laboratory.

ANATOMY: One Laboratory.

BACTERIOLOGY: One Laboratory.

HORTICULTURE: One Laboratory.

ENGINEERING: Three Laboratories—For Civil, Electrical, and Mechanical Engineering, besides smaller rooms for special work.

SHOPS: Four—One for bench work in wood, a forge room, a wood lathe room, and a machine shop. See Index.

DRAWING ROOMS: One for general drawing, and three for special drawing in Civil, Electrical, and Mechanical Engineering, respectively.

Each of the Laboratories mentioned above occupies at least one room, and in some cases more.

*Experiment Station.*—The Agricultural Experiment Station is on the Horticultural grounds. Bulletins giving the results of experiments are issued at intervals. The Station is provided with an outfit of meteorological instruments, and daily observations are made by an officer of the U. S. Weather Bureau. See Index, "Experiment Station."

*Club-houses.*—The University has four club-houses which furnish about 210 young men with rooms and board. Two of these are substantial brick buildings on the Campus, affording accommodations for about 165 students. The other club-houses are wooden buildings, and have rooms for 45 students.

The 39th General Assembly appropriated \$33,000 for the construction of an additional club-house, included in those mentioned above. This building will accommodate about 75 lodgers, and will be completed about October 15, 1897.

For information about the equipment of the School of Mines and Metallurgy at Rolla, see Index.

#### **Lectures and Recitations:**

Lectures and recitations in all departments, except that of Law, are held on six days in the week. By the new schedule of hours the student's work has not been increased, but has been more evenly distributed.

#### **Religious Exercises:**

Religious exercises are held every morning in the University Chapel. They consist of a hymn by the choir, readings from the Old and New Testaments, a brief prayer, and a closing hymn by the congregation.

These exercises are made as attractive and beneficial as possible. During the present session, distinguished members of various churches have been invited to conduct them for one week, and to preach to the students and Faculty at some convenient time. A list of the ministers from a distance who have rendered this service during 1896-7 is given on page 14.



In Columbla there are churches of nearly all the prominent denominations. The University advises its students to attend regularly the services at the churches of their parents. The students maintain an efficient chapter of the Young Men's Christian Association, and one also of the Young Women's Christian Association. (See "Societies" below.) The University has much of moral and religious influence, but is non-sectarian.

**Provisions for Young Women :**

All departments of the University are open to women. In the lecture-rooms they receive the same instruction and meet the same intellectual requirements as the young men. There are special rooms—six in number—furnished with admirable equipment for health and comfort, and presided over by a matron, who has charge of all the young ladies in attendance. One of these rooms is fitted up as a gymnasium, containing all the appliances necessary for physical culture. During lecture hours the young ladies, when not attending lectures, are expected to be in their waiting-rooms, or in the University library, or at their respective homes.

The University has no boarding department; but many of the families of Columbla take boarders, and students find no trouble in securing, at reasonable rates, the comforts and refinements of home life.

For information about the Young Women's Christian Association and the Philalethian Literary Society, which are composed of students of the University, see "Societies" below.

**University Extension :**

1. A Summer School of Science, intended especially for teachers, will be conducted during the summer of 1897. For particulars see Appendix I.
2. Twelve weeks' courses in Agriculture and Horticulture, intended for farmers, were given in the winter of 1897, and will be given again during the winter of 1898. See Index, under "Short Winter Courses."
3. Special courses primarily for district school teachers are given in April and May of each year. See Index, "Teachers' Courses."

**STUDENTS.****Discipline :**

In the government of the University, the President and the Faculty rely chiefly upon the sense of duty of the student corps. The student is expected to pursue his studies with diligence, to attend classes regularly, and to live in the exercise of morality and good behavior. The removal of those who fail to meet these requirements is demanded in the interest of the University and the better class of students. Students are under the direct supervision of the University only when on the campus, but they are responsible for their conduct wherever they may be.

**Directions for New Students :**

1. New students will first present themselves for examination. This should be done *before paying tuition fees*. For dates of examinations, see the Calendar, page iii.

2. After passing the entrance examinations, the students must pay to the Treasurer the amount required. See "Expenses," page 22.

3. The Treasurer's receipt should be at once presented to the Proctor, who will enroll the student's name and give to him his class-card, with instructions how to have it filled.

4. If assistance is needed in obtaining board, application should be made to the Proctor.

**STUDIES.****Regulations in Regard to Studies:**

No student in any department of the University may have more than 18 hours a week in the lecture room, unless the course prescribed for the year requires a greater number of hours and he is following that course exactly.

Academic students are expected to spend not less than 15 nor more than 18 hours a week at lectures or recitations.

One hour in the lecture-room is considered equal to two and one-half in the laboratory, the drawing-room, the shop, and the commercial-room.

Class-cards must be properly filled, countersigned, and deposited with the Registrar, within three days after they have been issued. In all departments cards are signed by the Dean first and then by the President.

Students that enter the University in the first semester and wish to make any change in their class-cards for the second semester, are required to take out their cards again in the last week of the first semester, and to return them to the Registrar duly filled and approved on or before Tuesday, the first day of the second semester. Students that fail to comply with this requirement must pay a second entrance fee of \$10, unless specially excused. Excuses will not be granted except for grave reasons.

**Studies in Other Departments :**

Students registered in one department may take work in other departments for which in the judgment of the Professors concerned they are prepared; but only with the consent of the Dean or the Advisers of the department in which the student is registered. Students taking work in another department than that in which they are registered are subject as respects this work to the rules of the department in which the work belongs.

1. Academic students may take Anatomy or Physiology, or both, in the first year of the Medical Course, or Bacteriology in the second year; Drawing, Book-keeping, Shop Work, and any other work not below the Freshman ('Academic') grade, in the College of Agriculture and Mechanic Arts; and any instruction offered in the Normal department. None of this instruction,



however, shall count toward any Academic degree unless it is allowed in the regulations respecting studies for such degree.

2. Law students may take any instruction offered in other Departments of the University, but it shall not count toward any degree in Law.

3. Medical students in their first year may take any work offered in the Academic department, and the College of Agriculture and Mechanic Arts; and in their second and third years, any work offered in the University; but such work shall not count toward the degree of M. D., unless it is included in the regular Medical course.

4. Students in the College of Agriculture and Mechanic Arts may elect in the Junior years the courses in Physiology and Hygiene from the first year of the Medical course, and from the Academic or Normal department any subject for which they are prepared, and which is germane to the work of the College. Electives taken as indicated count toward the degree of B. Agr.

5. Engineering students may take in their Freshman and Sophomore years any instructions offered in the Academic department, the Normal department, in the College of Agriculture and Mechanic Arts, or Anatomy and Physiology in the First year of the Medical Course; and in their Junior and Senior years they may take anything offered in the University; but such instruction shall not count toward a degree in Engineering.

6. No work shall count toward the Normal diploma, except so far as it may conform to the requirements specified in the announcement of the Normal Department.

7. Instruction in Military Science and Tactics is open to students in all departments.

#### **Graduate Studies :**

A number of graduate courses are offered. For details see announcement of Graduate Department.

#### **Examinations and Class Honors :**

1. Examinations at the end of each semester close the studies pursued to that point. Re-examinations for change of grades are not allowed.

2. The honor of valedictorian is awarded in the various departments to that student who has the highest grade.

3. All special examinations, except for change of grades, and the acceptance of grades from other institutions, are in the discretion of the professors.

#### **Reports :**

From all departments, except those of Law and Medicine, reports of students are sent, at the close of each semester, to the parents or guardians, showing their standing in the subjects that they are pursuing.

## EXPENSES.

**Fees and Deposits:**

Academic students and those in the School of Agriculture pay an entrance fee of \$10, and library and incidental fees amounting to \$10.

Law students (regular or special) pay \$50 a year. Students entering the Junior class late will not be entitled to any reduction in the amount of the fee, except as stated below. Books cost about \$35 a year.

The Medical student pays \$20 for the first year; for the second year, \$50; for the third year, \$50.

The Engineering student pays \$20 for the Freshman, and the same for the Sophomore year; for the Junior and Senior years he pays \$50 each. If he takes one professional study or two studies of any kind from the Junior or Senior year, he must pay \$50.

State Cadets in the Academic Department or in the College of Agriculture and Mechanic Arts, including the School of Engineering, pay neither entrance nor library and incidental fees; but if they take laboratory work they must make the required deposits. In all other departments of the University they pay the regular fees. If they take any study in Law or Medicine whatsoever, they must pay the full fees of that department.

Graduate students in any department of the University pay fees amounting to \$10 a year, and the usual laboratory deposits if they take laboratory work. If they take undergraduate work in any department, they must pay the full fees in that department. Graduates of colleges and other universities will not be classed as graduate students if they take undergraduate work.

Students in any department that withdraw before the opening of the second semester, will, upon application, have refunded to them in the early days of March, one-fourth ( $\frac{1}{4}$ ) of the fees for the whole session; but such students must, before the close of the first semester, file with the President written application addressed to the Board of Curators for the refunding of that part of the fees. Students that enter during the second semester will pay three-fourths ( $\frac{3}{4}$ ) of the fees for the entire session.

In all the laboratories, except the chemical, and in certain departments of the shop, a deposit of \$5 for a session, or any part thereof, is required. Hereafter this deposit will be required in the Laboratory of Anatomy also. This deposit, less deduction for loss arising from cost of material or from injury, is returned at the end of the laboratory course in any session. In the Chemical Laboratory the deposit is \$9. Only Teaching Fellows are exempt from making these deposits.

The charge for a diploma is \$3 and for a certificate \$2.

Laboratory deposits and rent of rooms in the Club-houses must be paid to the Proctor; all other fees must be paid at the Boone County National Bank, to the Treasurer of the University. *All fees and deposits must be paid in advance.*

The student who has attained the highest rank in the graduating class of any "approved school" will be permitted to enter the Academic department of the University, or the College of Agriculture and Mechanic Arts (including Engineering) without the payment of the entrance and the library and incidental fees for the first year.

Students who fail to comply with the regulation requiring class-cards in the second semester to be filled, approved and filed with the Registrar by or before Tuesday, the first day of the semester, must pay a second entrance fee of \$10, unless specially excused. Excuses will not be granted except for grave reasons.

For statement of expenses in the School of Mines and Metallurgy (at Rolla, Missouri), see page 36.

**Board:**

Board in private families, with lodging, fuel and light, may be obtained for from \$3 to \$4.50 a week.

The Club-houses accommodate about 210 students. In the large brick club building situated on the Campus—known as the University Boarding Club—room-rent for each student is from \$20 to \$25 a year, according to location of the room. This includes room-rent, the attention of servants, heat, water, and the aid of a matron, who supervises the house-keeping. It is payable on or before the first day of September. The cost of board, room-rent, fuel, lights and washing, to those who enter a club, is about \$2 a week. Each room is furnished with a double bedstead, a stove, a table and two chairs. The occupants are expected to furnish whatever else they deem necessary. The University Club-house is furnished with a good system of steam heating and ventilation, and with new closets and bath-rooms of the best quality. The rooms are lighted with electric lights.

The members of the club have their own officers—president, commissary, secretary, censors, etc. They levy and collect assessments, buy their own provisions, and thus regulate their own expenses. The matron supervises the preparation and serving of the food and the cleaning of the building.

Students in the College of Agriculture and Mechanic Arts will have the preference of rooms in the Agricultural club-houses, provided application be made before the opening of the first semester, in September; but they will pay the same rent as other students. These two buildings accommodate 32 men. The rent of these rooms is from \$10 to \$12.50 a session.

In any club building, only two students will be allowed in one room, except by consent specially given by the Executive Board; and when three thus occupy one room, each of the three must pay full room-rent.

Except by consent of the Executive Board, specially given, students that do not rent rooms in a club will not be permitted to take their meals at the club table. On no account will table board in a club be given to any person not duly matriculated in the University.

As the accommodations of the club-houses are limited, it is necessary for students who wish to engage rooms to make early application for them; they are frequently all engaged before the opening of the college year. The rooms are assigned in the order of application, and requests for them must be made to the Proctor of the University.

The new club-house, for which the Thirty-ninth General Assembly appropriated \$33,000, will be ready for occupancy about October 15, 1897. It will accommodate about 75 students. The prices of rooms have not yet been determined.

#### DEGREES AND CERTIFICATES.

##### Degrees Conferred:

The following degrees are now conferred by the University:

In the Academic department, Bachelor of Arts (A. B.), Bachelor of Letters (B. L.), Bachelor of Science (B. S.).

In the Normal department, Bachelor of Pedagogics (B. P.).

In the School of Agriculture, Bachelor of Agriculture (B. Agr.), and Master of Agriculture (M. Agr.).

In the Law department, Bachelor of Laws (LL. B.), and Master of Laws (LL. M.).

In the Medical department, Doctor of Medicine (M. D.).

In the School of Engineering, Bachelor of Science (B. S.) in Civil Engineering, in Electrical Engineering, and in Mechanical Engineering, respectively. The degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), are also given for graduate work.

The degrees of B. S. in Mining Engineering, in Civil Engineering, and in Chemistry and Metallurgy, and the graduate degrees of Civil Engineer (C. E.), and Engineer of Mines (E. M.), are given in the School of Mines and Metallurgy, at Rolla, Missouri.

In addition to the above, the usual Master's degrees and the degree of Doctor of Philosophy (Ph. D.), are conferred upon the completion of sufficient graduate work. For particulars, see announcement of the "Graduate Department."

Except that of Doctor of Laws (LL. D.), no degrees are conferred *honoris causa*.

For further information, see the respective departments.

##### Certificates:

A certificate in surveying, one in Pedagogics, one in the two-years' course in Agriculture, and also one in Military Science and Tactics, are given.

Three certificates (in Assaying, Surveying, and Electricity) are given at the School of Mines and Metallurgy, Rolla.

For further information, see these departments.

**COMMENCEMENT EXERCISES.**

The Commencement Exercises occupy the four days ending with the first Wednesday in June of each year. For specific days, see Calendar, page iii.

**PRIZES.****Curators' Scholarships :**

By order of the Board of Curators, the student who attains the highest rank in the graduating class of any approved school will be permitted to enter the Academic department of the University or the Agricultural and Mechanical College (including Engineering) without the payment of the first year's entrance and library and incidental fees.

The student attaining the highest grade, or who shall be first in merit, in taking the degree of A. B., B. S., or B. L., in the graduating class of any of the universities or colleges composing the Missouri College Union, will be admitted to the Law or to the Medical department of the University for the first year without payment of any tuition fees. The Missouri College Union is now composed of Washington University, Westminster College, William Jewell College, Drury College, Central College, Missouri Valley College, and the University of the State of Missouri.

Students who hold Teaching Fellowships (see page 27) are admitted to the University without the payment of entrance and library fees, or laboratory deposits.

**Stephens Medal :**

Founded by the Hon. James L. Stephens, of Columbia, and annually awarded for the best oration by a member of the Senior class. The prize consists of a book in defense of the Christian religion, and a gold medal, for the purchase of which the annual interest on \$500 is available.

**The Laws Astronomical Medal :**

For conditions of award, see Index, under "Astronomy."

**Dachsel Prize :**

Ten dollars in money, by the late Charles Dachsel, engineer, of Jefferson City, Mo., is awarded for the best thesis on the steam engine.

**McAnally Medal :**

For the best English essay. See Index, under "English."

**Rollins Scholarships :**

See page 26.

**Law Prize :**

See announcement of Law Department.



**Medals Offered by the Literary Societies :**

The literary societies in the University offer medals to the winners in their inter-society contests in declamation, essay, oration, etc.

**SOURCES OF AID TO STUDENTS.****1. The Rollins Aid Fund :**

Anthony W. Rollins, M. D., an honored citizen of Boone county, father of the Hon. James S. Rollins, dying in 1845, left by his will the sum of \$10,000 in trust for the purpose of educating such poor and indigent youths of Boone county, both male and female, as might be unable to educate themselves. Three-fourths of the annual interest on the fund, according to the directions of the donor, is to be devoted to the education of the youths of Boone county, and the remaining one-fourth is to be added to the interest-bearing principal. The fund amounts now to about \$40,000. The President of the University is required, at each annual Commencement, to invite the citizens, who may be present, to subscribe for the enlargement of this fund. The beneficiaries of this charity are annually selected by the President of the University from the indigent youths of Boone county, male and female. In compliance with the wishes of the donor, the selection is made with reference to the moral as well as the intellectual qualities of the youths inclined to avail themselves of the advantages of the fund, preference being given, in the selection of boys, to such as evince an inclination to preach the gospel.

Applications for aid from the Rollins Aid fund must hereafter be in writing; a blank form will be furnished by the Proctor, with whom it must be filed after it has been filled. The applicant must appear in person at the opening of the first semester, September 14, as no reservation will be made. No application should be made or will be received, unless the applicant has passed the examinations for entrance and has been duly admitted to the University. Hereafter a part of the money given to each beneficiary may be paid at the opening of the first semester and a part at the opening of the second semester.

**2. The James S. Rollins University Scholarships :**

In 1889 the Hon. James S. Rollins left six thousand dollars (\$6,000) to endow six scholarships in the University—"the interest" on this \$6,000 "to be forever used and appropriated under the authority and by the direction of the Board of Curators of the University of the State of Missouri, for the following purposes, that is:

"To found scholarships to be awarded by the President and Faculty of the University—the vote in each case to be by ballot—as a reward for excellence and promise in—

"*First*—The College of Arts, for the degree of A. B., fifty dollars.

"*Second*—The College of Arts, for the degree of B. S., fifty dollars.

"*Third*—The College of Agriculture and Mechanic Arts, for the degree of B. Agr., fifty dollars.

"*Fourth*—The College of Law, for the degree of LL. B., fifty dollars.

"*Fifth*—The College of Medicine, for the degree of M. D., fifty dollars.

"*Sixth*—The College of Engineering, for the degree of C. E., fifty dollars.

"These scholarships are intended as a recognition of merit and character in the beneficiaries, and shall be payable on the first day of June of each year to that member of the *Junior class*, in each of the colleges designated, who shall be adjudged entitled to it by the President and Faculty; and the names of the persons receiving said scholarships shall be publicly announced on Commencement day by the President of the University.

"In according these scholarships, it is earnestly impressed upon the President and Faculty of the University, that in the mind of the donor, purely intellectual and literary ability are not alone to be considered, but that the moral character of the contestants should be regarded as a factor of no small weight in coming to a decision.

"With the earnest hope that by the means here provided, worthy young men and women may in all coming time be helped and encouraged in their struggle toward a higher life and greater usefulness, this fund is committed to the honor and good faith of the State, whom the Board represents, and by whose authority the donation is made and accepted.

I am, very respectfully,

(Signed)

JAMES S. ROLLINS."

### 3. Cadetships:

Each Senator and Representative of the General Assembly of Missouri may appoint two cadets from his district. For further information see report of the Department of Military Science and Tactics.

### 4. Yeater Scholarships:

Under the provisions of the Yeater act passed by the 38th General Assembly of Missouri, one or more scholarships are to be established in every county whenever funds, under that act, accumulate. See Appendix II.

### 5. Curators' Scholarships:

See page 25.

### 6. Teaching Fellowships:

Teaching Fellowships are annually established in any subject where such additional teaching force may be required. Students holding these are put down in the list of the Faculty as Teaching Fellows. They are appointed by the Board of Curators, are required to teach five or six hours a week, and receive for this service \$200. They are required to devote the rest of the time to graduate work approved by the Professor whom they assist and by the President of the University. Only those who have com-

pleted the longest undergraduate course given in the University in any subject are eligible to the fellowships in that subject, and they must be recommended to the Board of Curators by the Professor of said subject. Students holding these fellowships are not required to pay entrance and library fees, nor to make laboratory deposits.

#### 7. Club-houses:

See page 23.

#### 8. Labor on Farm and Garden:

### PHYSICAL CULTURE.

#### Gymnasium:

The Thirty-eighth General Assembly appropriated the sum of \$7,500 for the equipment of a gymnasium, and \$1,300 for the improvement of the athletic grounds. Rooms in the new Academic Hall have been set aside for the gymnasium proper, and fitted with baths, lockers, etc. A fine equipment has been put in. The director is a graduate of the Medical Department of Harvard in the four years' course, and served formerly as an athlete under Dr. Sargent. There is a separate gymnasium, thoroughly equipped, for women.

#### Athletic Grounds:

In addition to the gymnasium there are athletic grounds, with base-ball and foot-ball fields. These are enclosed, a grand-stand has been erected, and a track constructed for bicycling and running. These, with the tennis courts, will provide ample means of exercise for every student in the University. In recognition of the generosity of members of the Rollins family toward the Athletic Association, the field has been named by the Curators "The Rollins Athletic Field."

### LECTURES AND SERMONS.

During the session the University invites a number of distinguished men to deliver public lectures to the students, and also a number of eminent ministers, who lead chapel exercises and preach in the Auditorium.

### STUDENTS' PERIODICALS.

The students maintain and manage two periodicals. These are the *Independent* (bi-weekly), and the *Savitar* (annual).

### SOCIETIES.

#### 1. Literary:

There are connected with the University at Columbia, ten Literary Societies for students, the "Athenæan," the "Union Literary," the "Bliss Lyceum," the "Medical Society," the "Agricultural Society," the "Engineers' Society," the "Missouri State University Debating Club," the "New Era Debating Club," "The Forum" (a Law school debating club); and the "Philalethean Society" (composed of young women only). These societies



hold weekly meetings for improvement in debate, declamation, oratory and composition, and form an important means of culture, especially in speaking and writing.

For societies at the School of Mines, see page 37.

## **2. Young Men's Christian Association :**

The object of this organization, which dates its existence in the University from January 18, 1890, is the same as in other institutions of learning: namely, to represent and in every way to promote practical Christianity, particularly among the students. The work has been rich in good results.

Devotional exercises are held every Sunday afternoon. Classes hold weekly meetings for the study of the Bible, and special religious services are held from time to time.

A movement has been set on foot to erect a building to cost at least \$40,000, for the Young Men's and Young Women's Christian Associations. For this purpose, the former has already pledged the sum of \$6500, and any encouragement from sympathetic friends will be gratefully acknowledged. It is intended that the building shall be complete in all the appointments necessary for the work of the association.

A lot immediately in front of the University Campus has been purchased for the site of this building at a cost of \$2,650, of which all but about \$800 has been paid.

The Association is at present using the old building which stood on the lot when purchased, having fitted up a reading and room for games for the benefit of the Association and its student friends. On the rear of the lot a tennis court has been built at a cost of \$26, which outclasses any on the Campus, and is one of the advantages offered by the Association.

At the beginning of each scholastic year a committee from the Y. M. C. A., to be recognized by their badges, meet students at the trains and freely render them valuable assistance in securing board by introducing them to friends and to officers of the University, and by various acts of kindness. A letter sent in advance to the President of the Young Men's Christian Association will receive prompt and cheerful attention.

The General Secretary, employed by the Association, has his office at the Association building, and is ever ready to render any aid to students that may be in his power.

The Association also offers, annually, to the public, particularly to the students, at actual cost, a series of literary and musical entertainments of high order and excellence. During the session of 1896-97 the following lectures and concerts were thus given:

John Thomas Concert Company; Temple Quartette; John Temple Graves, "The Twentieth Century Woman;" Sherwood Quartette; H. M. Wharton, "Horseback-ride Through Palestine;" John P. D. John, "Did Man Make God or God Make Man;" F. W. Gunsaulus, "Savonarola."

**3. Young Women's Christian Association :**

The Association, which is similar in its aims and methods to the foregoing, was organized April 2, 1891. Its object is the advancement of Christian work and the development of Christian character, particularly among the young women of the University. Its weekly meetings are held at 4 p. m. every Sunday, one of them every month being a union meeting in conjunction with the Y. M. C. A.

Both of these Associations have enjoyed the hearty encouragement of all the authorities of the University.

**4. Musical :**

There also exist among the students Glee, Mandolin, Guitar and Banjo clubs, which form an attractive feature of University life.

**5. Athletic Association :**

For several years on Athletic Association has existed among the students. Under its direction and encouragement a Foot-ball Team, Tennis Teams and a Base-ball Team are each year organized; and in addition athletic exhibitions (indoor and outdoor) are given. The Spring Games on the new Athletic Field will soon, we hope, become Intercollegiate throughout the State.

**6. Alumni :**

The Alumni Association is composed of graduates of the University. It holds an annual meeting on Tuesday of Commencement week, and is addressed in the University chapel by an orator previously selected from its own body.

The objects of this Society are the promotion of education, especially in the halls of the Alma Mater, the reunion of early friends and co-laborers in literary pursuits, and the revival of those pleasing associations which entwine themselves about university life.

The fee for membership is \$2. This is added to the permanent fund, only the interest of which is used. It is hoped that all graduates of the University, whether academic or professional, will become members of the Association. The University Registrar, Irvin Switzler, solicits aid in securing facts for the next Triennial, and will be thankful for notices of officers and graduates, and for books, pamphlets and articles published by them.

The officers of the Association are: Charles E. Yeater, Sedalia, President; John H. Duncan, St. Louis, First Vice-president; Isidor Loeb, Columbia, Second Vice-President; N. T. Gentry, Columbia, Secretary; C. B. Rollins, Columbia, Treasurer.

A subscription fund of \$3000 has been raised and placed at interest, which is used in defraying the expenses of the annual meeting at Commencement—a very enjoyable and also a very profitable occasion. The

Alumni constitute, in fact, one of the largest elements in the life of the University, and, efficiently organized, may become the most powerful agent in her development and prosperity. No effort should be omitted, both to strengthen the central organization at Columbia and to extend its branches throughout the State.

LOCAL CHAPTERS OF THE ALUMNI ASSOCIATION.

*Chillicothe:*

T. F. Spencer, President.  
Scott C. Miller, Secretary.

*Clarksville:*

Dr. C. W. Pharr, President.  
———, Secretary.

*Denver, Colorado:*

Judge G. W. Miller, President.  
J. T. Bottom, Secretary.

*Fort Smith, Arkansas:*

J. B. Gass, President.  
F. A. Youmans, Secretary.

*Huntsville:*

———, President.  
Wm. Palmer, Secretary.

*Jefferson City:*

Henry W. Ewing, President.  
Frank M. Brown, Secretary.

*Kansas City:*

Hon. W. S. Cowherd, President.  
James Black, Secretary.

*Macon City:*

R. W. Barrow, President.  
Dr. R. Gillaspay, Secretary.

*Moberly:*

Judge B. S. Head, President.  
F. G. Ferris, Secretary.

*Marshall:*

Judge James Cooney, President.  
William Murrell, Secretary.

*Warsaw:*

T. B. Weeler, President.  
Henry P. Lay, Secretary.

*Sweet Springs:*

Hon. Robert W. Prigmore, Presid't.  
Judge V. C. Yantis, Secretary.

*Richmond:*

Thomas N. Lavelock, President.  
F. P. Divelbiss, Secretary.

*Santa Fe, New Mexico:*

———, President.  
Judge N. B. Laughlin, Secretary.

*Sedalia:*

Louis Hoffman, President.  
Hon. Chas. E. Yeater, Secretary.

*Silver City, New Mexico:*

G. W. Miles, President.  
R. H. Theilman, Secretary.

*Springfield:*

Hon. J. C. Cravens, President.  
J. P. Bates, Secretary.

*Slater:*

J. B. Land, President.  
———, Secretary.

*St. Joseph:*

Judge H. S. Kelley, President.  
W. H. Utz, Secretary.

*St. Louis:*

H. B. Hilgeman, President.  
H. Phillips, Secretary.

*Baton Rouge, La.:*

W. W. Clendenin, President.  
W. R. Dodson, Secretary.

## GIFTS TO THE UNIVERSITY.

Section 3820 of the Revised Statutes of Missouri, 1889, provides that whenever any moneys shall be paid into the State Treasury to be added to the "Seminary Fund" (which is but another name for the Endowment Fund of the University), and when the same shall amount to one thousand dollars, or more, a State Certificate of indebtedness shall be issued, due twenty years after date, and bearing interest at the rate of 5 per cent per annum, to be forever used and appropriated in accordance with law and the gift, grant or devise. Other sections of the University Act provide for the disposition of any other property, real or personal, which may be received by the University, and for its investment and preservation in accordance with the terms of the writing under which the grant, gift or devise is made. The State of Missouri is constituted the custodian and trustee of all funds so received, and is pledged for the safe-keeping, investment, and due application of the same, and all interest due thereon.

**To the General Library :**

|                                  | Vols. |                       | Vols. |
|----------------------------------|-------|-----------------------|-------|
| C. M. Barnes.....                | 1     | S. B. Schuffelin..... | 1     |
| Thomas A. Davis.....             | 1     | Wm. V. Byars.....     | 1     |
| J. R. Bennett.....               | 1     | P. C. Hubert.....     | 1     |
| Dr. T. J. J. See.....            | 1     | G. E. Stechert.....   | 1     |
| Bureau International Exchange,   |       | State Government..... | 23    |
| Uruguay .....                    | 1     | U. S. Government..... | 339   |
| National Education Association.. | 3     |                       |       |

The following periodicals have been presented to the Library :

American Economist, Apostolic Guide, Boonville Democrat, Central Baptist, Columbia Herald, Columbia Statesman, Hannibal Daily Journal, Industrialist, Kansas City Mail, Kansas City Live-stock Indicator, Linn County Bulletin, Marshall Democrat-News, Medical Mirror, Merck's Medical Bulletin, Mexico Intelligencer, Mexico Ledger, Jefferson City Tribune, Post-Dispatch (daily), Saline County Progress, The Presbyterian, Plattsburg Leader, Salisbury Gazette, St. Joseph Herald, St. Joseph Gazette.

**To the Geological Department :**

|  |     |   |     |
|--|-----|---|-----|
| U. S. Geological Survey, map sheets..... | 828 | U. S. Geological Survey, bound volumes.....           | 27  |
| U. S. Geological Survey, Atlas...        | 27  | Weather Bureau, bound volumes                         | 3   |
| Weather Bureau, map sheets...            | 200 | U. S. Geological Survey, pamphlets.....               | 110 |
| Weather Bureau, Atlas.....               | 6   | State Department, Washington City, bound volumes..... | 37  |
| Hydrographic office, map sheets          | 25  |   |     |
| Sup't of Documents, Atlas.....           | 5   |   |     |

|  |    |  |      |
|--|----|--|------|
| B. & O. R. R., photographs.....                              | 6  | G. C. Broadhead, 85 pamphlets,<br>since bound into volumes.....  | 25   |
| Canadian Pacific Railroad, photo-<br>graphs.....             | 1  | Fossils, minerals and ores from<br>Willard E. Winner, Kansas<br>City, about.....   | 5000 |
| Fitchburg Railroad, photo-<br>graphs.....                    | 3  | Specimens deposited by R. A.<br>Blair of Sedalia, Mo., a lot of<br>mastodon bones; also about<br>50 stones axes and over 100<br>chipped flints, arrow-heads,<br>etc., with other articles. |      |
| Arkansas Geological Survey,<br>bound volumes.....            | 10 | Collected by G. C. Broadhead,<br>over 100 specimens and 50<br>species of fossils.  |      |
| New Jersey Geological Survey,<br>bound volumes.....          | 5  | From J. C. Edwards, fossil spec-<br>imens.....   | 13   |
| Ohio Geological Survey, bound<br>volumes.....                | 2  | From T. B. Perry, fossil speci-<br>mens.....   | 4    |
| Indiana Geological Survey,<br>bound volumes.....             | 5  | From R. M. Gennings, fossil spec-<br>imens.....  | 20   |
| Canada Geological Survey,<br>bound volumes.....              | 1  |  |      |
| Minnesota Geological Survey,<br>bound volumes.....           | 1  |  |      |
| Missouri Geological Survey,<br>bound volumes.....            | 1  |  |      |
| Interior Department, volumes<br>U. S. Geological Survey..... | 3  |  |      |

**To the Agricultural College Library :**

|                                    | Vols. |                                   | Vols. |
|------------------------------------|-------|-----------------------------------|-------|
| Pennsylvania Board of Agr.....     | 8     | Missouri Board of Agr .....       | 2     |
| Michigan Board of Agr.....         | 2     | Dept. of Agr. of U. S.....        | 4     |
| Missouri Horticulture Society..... | 2     | American Shropshire Ass'n.....    | 1     |
| American Aberdeen Angus Ass'n.     | 1     | Holstein Friesian Association.... | 1     |
| American Hereford Ass'n.....       | 1     | American Guernsey Cattle Club..   | 3     |

**To the Agricultural Museum :**

G. W. Spencer, specimens of corn.  
 G. A. Berry, specimens of corn.  
 Col. G. W. Waters, specimens of corn.  
 Missouri Experiment Station, 15 fertilizers.  
 Axford Fence Company, Fence Machine.

**To the Agricultural College Reading Rooms :**

Farmer's Friend; Farmer's Home; Ornamental and Forest Tree Grower;  
 The Southern States; The Progressive South; Chicago Produce; Farm and  
 Fireside; Prairie Farmer; The Sanitary Inspector; The Elgin Dairy Report;  
 Farm, Stock and Home; Wallace's Farmer and Dairyman; Breeder's Gazette;  
 Practical Farmer; The Successful Farmer; Agricultural South; New Ideas;  
 Sheep Breeder and Wool Grower; The Industrialist; Western Agriculturist  
 and Live Stock Journal; Agricultural Epitomist; Farmer's Advocate; Da-

kota Farmer; The American Creamery; Nebraska Farmer; Sugar Beet; Indiana Farmer; Farmer's Review; The Agricultural Student; Kansas Farmer; The American Fertilizer; West Virginia Farm Reporter; Fruit Grower's Journal; Farm and Home; The Western Soil Culture; Ohio Farmer; Pacific Coast Dairyman; Holstein Friesian Register; Industrial American; American Agriculturist; Poultry Journal; Home, Farm and Factory; The Bee Keeper's Review; The American Farmer; Texas Farm and Ranch; American Bee Journal; Southern Planter; Oregon Horticulturist; Hoard's Dairyman; Farming; American Hog and Corn Journal; American Horticulturist; Farmer's Guide; Western Plowman; Weather and Crops; Pacific Rural Press; California Cultivator; Northwest; Oregon Agriculturist; The Milk Reporter; Sun, Baltimore; Farmer's Magazine; The South West; American Horticulturist; Mirror and Farmer; The Homestead; Success with the Garden; American Cultivator; Rural New Yorker; Michigan Farmer; Farm Poultry; Poultry Topics; Michigan Poultry Breeder; The American Poultry Journal.

#### **To the Horticultural Department :**

|                                       |                                    |
|---------------------------------------|------------------------------------|
| Hon. J. C. Evans, raspberry plants.   | S. C. Experiment Station, grape    |
| H. C. Groves & Sons, Nursery stock.   | vines.                             |
| Jas. B. Wild & Bros., rare plum trees | Professor M. Updegraff, rare South |
| and ornamental shrubs.                | American seeds.                    |
| J. C. Vaughan, greenhouse plants.     |                                    |

#### **To the Experiment Station :**

|                                 |                            |
|---------------------------------|----------------------------|
| Tower Brothers, one cultivator. | Conrad Hartzell, one plow. |
|---------------------------------|----------------------------|

#### **To the Law Observatory :**

|  |                                      |
|--|--------------------------------------|
| Osservatorio Astronomico, Milan, Italy.....                | 3 pamphlets                          |
| Mr. John Tebbutt, Windsor, New South Wales.....            | 1 pamphlet                           |
| Herr A. Wolfer, Zürich, Switzerland.....                   | 1 pamphlet                           |
| O. E. Schrötz, Christiano, Norway.....                     | 1 pamphlet                           |
| Copenhagen Observatory, Copenhagen, Denmark.....           | 2 pamphlets                          |
| Baron D'Engelhardt, Dresden, Germany.....                  | 1 book                               |
| Columbia College Observatory, New York.....                | 2 quarto pamphlets                   |
| Lick Observatory, Mt. Hamilton, Cal.....                   | 1 book and 1 picture of Moon         |
| Leander McCormick Observatory, University of Virginia..... | 1 pamphlet                           |
| Washburn Observatory, Madison, Wis.....                    | 1 book                               |
| Dr. Rudolph Wolf, Zürich, Switzerland.....                 | 1 pamphlet                           |
| Mr. Walter Ficklin, Columbia, Mo.....                      | 1 book                               |
| U. S. C. & G. Survey, Washington, D. C.....                | 1 book and 2 pamphlets               |
| Smithsonian Institution, Washington, D. C.....             | 1 book                               |
| U. S. Weather Bureau, Washington, D. C.....                |                                      |
| .....  | 1 monthly periodical and 2 pamphlets |
| U. S. Dept. of Agriculture, Washington, D. C.....          | 1 book                               |



University Observatory, Strasburg, Germany.... 1 quarto book  
Milton Updegraff, Columbia, Mo..... 5 books and 7 pamphlets

**To the Political Science Library :**

|                               | Vols. |                                      | Vols. |
|-------------------------------|-------|--------------------------------------|-------|
| Auditor of State of Ohio..... | 1     | Auditor of State of Nebraska.....    | 1     |
| “ “ Kansas.....               | 1     | Secretary of State of Wisconsin..... | 1     |
| “ “ Michigan.....             | 1     | U. S. Civil Service Commission.....  | 8     |
| “ “ Iowa.....                 | 1     | Supervisor B. & L. Ass'ns. of Mo.... | 1     |
| “ “ Minnesota.....            | 1     | Auditor of State of Missouri.....    | 2     |
| “ “ Illinois.....             | 1     | Railroad Commissioners of Mo.....    | 2     |
| “ “ Indiana.....              | 2     | President R. H. Jesse.....           |       |
|                               |       | ..... Wall map of U. S.              |       |

**To Library of Romance Languages :**

|                                     | Vols. |                          | Vols. |
|-------------------------------------|-------|--------------------------|-------|
| Students and anonymous friends... 9 |       | Dr. P. Passy, Paris..... | 1     |
| H. Weltner, Paris.....              | 1     |                          |       |

Students and anonymous friends, 26 pamphlets, and a subscription for one year to the *Journal des Debats*.

**B. THE SCHOOL OF MINES AND METALLURGY, AT ROLLA.**

**Buildings and Equipment :**

*Main Building.*—The buildings of the School of Mines are situated in the most elevated part of the town of Rolla. They are substantial brick structures, well ventilated and lighted. The main building and the mining laboratory are heated by steam. The main building contains the assembly-room, the library, lecture rooms for the Professors of Engineering, Mathematics, Physics, and for Academic work, the Physical laboratory, offices of Executive Committee and Director, etc., and accommodates in its basement (temporarily, it is hoped) the Shop. For the work in Engineering there is ample provision of field instruments, and a beginning has been made in the acquisition of testing apparatus.

*Physical Laboratory* —The Physical laboratory has recently received several thousand dollars' worth of apparatus, and its equipment is being augmented from time to time. It is especially strong on the side of electricity, and comprises two dynamos, with which a small electric lighting plant is maintained.

*Chemical Laboratory.*—The Chemical laboratory is housed in a separate building, admirably adapted to its occupancy. This contains a lecture-room, qualitative laboratory, quantitative laboratory, Professor's laboratory, assay laboratory, weighing-room, evaporating-room, preparation-room, supply-room, and basement. Facilities for heat, light and ventila-

tion, and for carrying off foul or noxious gases, are excellent. Gas and water are supplied to each table. The assay laboratory, which is on the first floor, is amply provided with the proper furnaces, ore-crusher, pulverizing plate, balances, etc., and throughout the whole building the arrangement and equipment are such as to leave little to be desired.

*Mining and Metallurgical Laboratory.*—The Mining and Metallurgical laboratory, for which the 37th Assembly made an appropriation of \$25,000, is now completed. In addition to provision for instruction, both by lectures and by laboratory methods, in Mineralogy and in Geology, there is a special laboratory fitted with full-sized working machinery and the needed furnaces for practical illustration of the processes of ore-dressing and of metallurgy.

In the second story is a drawing-room of about 600 square feet of floor space, lighted from the top by sky-lights.

*Gifts to the School of Mines.*—From the Ingersoll-Sergeant Drill Co., one steam drill; from the St. Joseph Lead Co., and Mr. Rowland Hazard of Mine La Motte, lead ore; from Mr. Frank W. Wilson of New York, Mr. J. E. Kirkham of Kansas City, and Mr. Rowland Cox of Aspen, Colorado, blue prints of bridge and mine work; from Mr. Aug. Nasse of St. Louis, mineral specimens; from the Hons. Joel D. Hubbard and Richard P. Bland, government publications; from Hon. David R. Francis, Secretary of the Interior, Historical map of U. S.

*Library.*—The library contains about 3,700 volumes. It is well provided with scientific and technical works designed to afford the student an opportunity of supplementing his class-work by collateral reading. There is also a respectable collection of works of general literature. On its reading-tables the leading scientific periodicals and others of general or literary interest are accessible. The library is open daily from 8 a. m. to 4 p. m.

*Club-house.*—The students' club-house or dormitory is a handsome three-story building, erected in 1890, and contains room enough for twenty-five or thirty lodgers. The dining-room and kitchen can supply board for sixty. No charge is made for room-rent, but each occupant of a room is required to make a deposit of \$5 to pay for any damages for which he may be responsible—the unconsumed portion of this fund being returned to him at the end of the session. The cost of board, including lights and heat, is at present \$13 a month. Any one who may wish to engage a room should make an early application, accompanying it with the five-dollar deposit.

#### **Expenses :**

An entrance fee of \$10 and a library fee of \$2 each semester are the only general charges. Students in the Chemical laboratory pay for material consumed and apparatus broken, to provide for which emergencies a deposit of \$10 is made at the beginning of the year, this sum being in-

creased to \$15 for those taking a "special" or "assay" course. The unused portion of this deposit is returned at the end of the year.

Board, fuel, lights, and washing, can be had for from \$12 to \$16 a month. The necessary expenses range from \$140 to \$200 a year.

**Athletics :**

Through the liberality of the Curators an athletic field has been enclosed and graded for the benefit of the students. It furnishes ample space for base-ball, foot-ball and lawn tennis. An athletic association exists among the students.

**Students' Societies :**

A society composed of both students and professors meets fortnightly to discuss topics of contemporary interest, scientific, literary, and historical. The advanced students in the Chemical Laboratory conduct a "Journal Club."

**Examinations :**

During the last week of each term all students are required to stand written examinations on the studies pursued, and the results of these examinations, with the average monthly grades, determine their term grades. A student, to pass, must attain at least 75 per cent.

**Monthly Reports :**

Regular monthly reports are sent to the parents or guardians of each student, showing the student's grade in scholarship for the month, and giving such other information in regard to his progress, attendance, etc., as may be thought to be of interest. The attention of parents and guardians is particularly called to these reports.

For more detailed information, the special catalogue issued by the College will be sent upon application to the Director, Prof. W. B. Richards, Rolla, Mo.

# DEPARTMENTS OF THE UNIVERSITY.

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The University comprises the following departments:

- I—ACADEMIC DEPARTMENT.
- II—NORMAL DEPARTMENT.
- III—DEPARTMENT OF LAW.
- IV—DEPARTMENT OF MEDICINE.
- V—DEPARTMENT OF MILITARY SCIENCE AND TACTICS.
- VI—COLLEGE OF AGRICULTURE AND MECHANIC ARTS, embracing the
  - A. *School of Agriculture* ;
  - B. *School of Mechanic Arts* ;
  - C. *School of Engineering* ;
  - D. *School of Mines and Metallurgy* ;
  - E. *Experiment Station*.

[These six departments are established and made co-ordinate by the statutes of Missouri.]

- VII—GRADUATE DEPARTMENT.
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## I. Academic Department.

### FACULTY.

RICHARD HENRY JESSE, LL. D.,

*President, and Professor of Ancient and Medieval History.*

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

*Professor of Mathematics.*

JOHN CARLETON JONES, A. M., Ph. D.,

*Professor of Latin Language and Literature, and Dean of the Department.*

EDWARD ARCHIBALD ALLEN, Litt. D.,

*Professor of English Language and Literature.*

HENRY CAPLES PENN, A. M.,

*Assistant Professor of English Language and Literature.*

GARLAND CARR BROADHEAD, M. S.,

*Emeritus Professor of Geology and Mineralogy, and Curator of the Geological Museum.*

MILLARD LEWIS LIPSCOMB, A. M.,

*Professor of Physics.*

WILLIAM GWATHMEY MANLY, A. M.,

*Professor of Greek Language and Literature.*

MILTON UPDEGRAFF, M. S., B. C. E.,

*Professor of Astronomy, Assistant Professor of Mathematics, and Director of the Observatory.*

†JOHN MILLER BURNAM, Ph. D.,

*Assistant Professor of Latin Language and Literature.*

†FREDERICK CHARLES HICKS, B. A., Ph. D.,

*Professor of History and Political Economy.*

JOHN PICKARD, A. M., Ph. D.,

*Professor of Classical Archaeology, Assistant Professor of Greek, and Curator of Museum of Classical Archaeology.*

FRANK THILLY, B. A., Ph. D.,

*Professor of Philosophy.*

LUTHER MARION DEFOE, A. B.,

*Assistant Professor of Mathematics.*

HOWARD AYERS, B. S., Ph. D.,

*Professor of Biology, and Curator of the Biological Museum.*

SIDNEY CALVERT, B. Sc., A. M.,

*Assistant Professor of Chemistry.*

ISIDOR LOEB, M. S., LL. B., Ph. D.,

*Acting Professor of History and Political Economy.*

BENJAMIN FRANKLIN HOFFMAN, M. L.,

*Professor of Germanic Languages.*

HENRY MARVIN BELDEN, B. A., Ph. D.,

*Assistant Professor of English Language and Literature.*

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†Absent for session of 1896-7.

RAYMOND WEEKS, A. M.,

*Professor of Romance Languages.*

MATTHEW B. HAMMOND, Ph. B., M. L.,

*Acting Assistant Professor of Political Economy.*

WILLIAM GEORGE BROWN, B. S., Ph. D.,

*Professor of Chemistry.*

JOHN RUTLEDGE SCOTT, A. M.,

*Professor of Elocution.*

WILLIAM VAN ALLEN CATRON, A. M.,

*Acting Assistant Professor of Latin Language and Literature.*

SILAS DINSMOOR, A. B.,

*Instructor in Chemistry.*

WILLIAM WALTER GRIFFITH, B. S.,

*Instructor in Physics.*

CURTIS FLETCHER MARBUT, B. S., A. M.,

*Instructor in Geology and Mineralogy.*

CHARLES HENRY THOMPSON, B. S.,

*Instructor in Botany.*

EDGAR E. BRANDON, A. B.,

*Teaching Fellow in Romance Languages.*

INEZ RIGGS, M. L.,

*Teaching Fellow in Germanic Languages.*

FRANCIS POTTER DANIELLS, A. B.,

*Teaching Fellow in Latin.*



## REQUIREMENTS FOR ADMISSION.

The following are the requirements for admission by examination to the Freshman class in the Academic Department:

### To the A. B. Course:

1. **LATIN.** Five books of Cæsar's Gallic War, four orations of Cicero, and Allen's Prose Composition. For two books of the Gallic War, eight books of Eutropius, or an equivalent of the *Viri Romæ*, may be substituted. Mastery of the essentials of etymology and syntax is expected.

2. **GREEK.** Three books of Xenophon's Anabasis, Woodruff's Greek Prose Composition, Goodwin's Greek Grammar.

This work may be accomplished in two years. A student may, for the session of 1897-98, substitute for the second year's work in Greek one year of history or one year of science. In that case he will be admitted if he is prepared to take up the Anabasis. White's First Greek Book will be useful for doing the first year's work.

3. **ENGLISH. A. In General.**—No pupil will be accepted in English whose written work is notably defective in point of *spelling, punctuation, idiom, or division into paragraphs.*

**B. English Composition.**—(1) The candidate will be required to write two essays of not less than two hundred words each, on subjects chosen by himself, from a considerable number set before him in the examination paper. One of the topics chosen must be taken from the books assigned for general reading under English Literature. (2) In place of the essay on the topic drawn from the books set for general reading, the candidate will be allowed to offer an exercise book containing the first draft of his school compositions, at least six in number, on topics taken from the prescribed course of reading, and certified to by his last English instructor as in his opinion the unaided work of the pupil.

### C. English Literature.

1. For General Reading and Composition work:

1897: Shakespeare's "As You Like It;" Defoe's "History of the Plague in London;" Irving's "Tales of a Traveller;" Hawthorne's "Twice Told Tales;" Longfellow's "Evangeline;" George Eliot's "Silas Marner."

1898: Milton's "Paradise Lost" (Books I and II); Pope's "Iliad" (Books I and XXII); "The Sir Roger de Coverley Papers" in "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "Ancient Mariner;" Southey's "Life of Nelson;" Carlyle's "Essay on Burns;" Lowell's "Vision of Sir Launfal;" Hawthorne's "The House of the Seven Gables."

1899: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger De Coverley Papers;" "Vicar of Wakefield;" "Ivanhoe;" DeQuincey's "Flight of a Tartar Tribe;" Cooper's "Last

of the Mohicans;" Lowell's "Vision of Sir Launfal;" Hawthorne's "The House of the Seven Gables."

1900: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger de Coverley Papers;" "Vicar of Wakefield;" "Ivanhoe;" De Quincey's "Flight of a Tartar Tribe;" Cooper's "Last of the Mohicans;" Tennyson's "Princess;" Lowell's "Vision of Sir Launfal."

2. For Minute and Critical Study:

1897: Shakspeare's "The Merchant of Venice;" Burke's "Speech on Conciliation with America;" Scott's "Marmion;" Macaulay's "Life of Samuel Johnson."

1898: Shakspeare's "Macbeth;" Burke's "Speech on Conciliation with America;" De Quincey's "Flight of a Tartar Tribe;" Tennyson's "The Princess."

1899: "Macbeth;" "Paradise Lost" (Books I and II); Burke's "Speech on Conciliation with America;" Carlyle's "Essay on Burns."

1900: "Macbeth;" "Paradise Lost" (I and II); Burke's "Speech on Conciliation with America;" Macaulay's Essays on "Milton" and "Addison."

D. *English Grammar*.—There will be included in the requirement for entrance knowledge of the leading facts of English Grammar, and proper tests of such knowledge will be made a part of the examination.

4. MATHEMATICS. Algebra and Plane Geometry. The equivalent of Smith's Elementary Algebra and of Wentworth's or Bowser's Plane Geometry is required.

5. HISTORY. General History—the equivalent of the work given in Myer's "General History."

**To the B. L. Course:**

1. LATIN. Same as for A. B. See above.

2. ENGLISH. Same as for A. B.

3. MATHEMATICS. Same as for A. B.

4. SCIENCE. One year's work, with laboratory practice, in any one of the following Sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. HISTORY. (A.) General History (as above for A. B.); (B.) History of England, and of the United States—the equivalent of the work given in Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution."

**To the B. S. Course:**

1. FRENCH and GERMAN—two years' work.

The two years' work in German, when offered, shall mean the ability to read at sight ordinary prose, to translate simple English sentences into German; and it includes a correct pronunciation of the language. The two years' work in French, when offered, implies the same ability in French as has been described above in German.

2. ENGLISH. Same as for A. B.

3. MATHEMATICS. Same as for A. B.

4. SCIENCE. One year's work each, with laboratory practice, in any *two* of the following Sciences: Biology (Zoology and Botany), Physics, Chemistry.

5. HISTORY. Same as for B. L.

The time to be given to each of the above requirements, and the character of the work required in each subject for admission to the Freshman class, are given in detail in the courses outlined for schools approved by the University. See pages 45-50.

#### Value in Units:

If a unit be defined as a year's work in a subject with five (5) periods a week in the class room or laboratory, and a period as about forty (40) minutes, then the subjects required for admission to the Freshman class have the following values in units: English, 3 units; Latin, 3; Greek, 2; Mathematics, 3; History, 1 or 2; Physics, 1; Chemistry, 1; Biology, 1.

The requirements for entrance by examination to the several Academic courses are as follows:

| A. B.        |         | B. L.        |         | B. S.           |         |
|--------------|---------|--------------|---------|-----------------|---------|
| English..... | 3 units | English..... | 3 units | English.....    | 3 units |
| Math.....    | 3 "     | Math.....    | 3 "     | Math.....       | 3 "     |
| History..... | 1 "     | History..... | 2 "     | History.....    | 2 "     |
| Latin.....   | 3 "     | Latin.....   | 3 "     | French or Ger.. | 2 "     |
| Greek.....   | 2 "     | Science..... | 1 "     | Science.....    | 2 "     |
| Total.....   | 12 "    | Total.....   | 12 "    | Total.....      | 12 "    |

In the B. S. course, the student may offer for the two years of French or German two years of Latin. The University will for the present accept this substitution, but does not recommend it. For the session of 1897-98 the applicant for admission may substitute for the second year in Greek a second year in History or one year in Science. It should be understood, however, that no substitute may be offered unless the student has, in the entrance examination, made a passing grade thereon.

To be admitted to the Academic Department by examination, the student must pass on at least ten (10) units; on the other two (2) he may be conditioned. The deficiency of two units may be in one subject, or in two; but where three units are required in any subject, the student must pass on at least two in order to receive any credit in that subject. All conditions must be made up under the direction of the Professor in charge of that subject. If the student is permitted to make up a condition in the University, such work shall not count toward a degree.

#### Time of Examinations:

Examinations for admission will be held at the University May 29 to June 4, and September 9 to 13, 1897. All persons desiring to enter the University at the opening of the session in the fall of 1897, except those holding

certificates of graduation from approved schools and those who have already otherwise fulfilled the entrance conditions, must present themselves at the Registrar's office, room 4, Academic Hall, at 8:30 a. m., Thursday, September 9. They will then receive complete directions as to examinations.

The program of examinations is as follows:

THURSDAY, SEPTEMBER 9.

- 9 a. m.: English.
- 2 p. m.: Mathematics.

FRIDAY, SEPTEMBER 10.

- 9 a. m.: Latin, French, German.
- 2 p. m.: Physics.

SATURDAY, SEPTEMBER 11.

- 9 a. m.: Biology, Greek.
- 2 p. m.: General History.

MONDAY, SEPTEMBER 13.

- 10 a. m.: U. S. History.
- 2 p. m.: Chemistry.

**Admission from Approved Schools:**

For the admission of graduates of approved schools upon their diplomas, see page 45; and of graduates of the State Normal Schools, see page 52.

**Acceptance of Grades:**

Students who do not hold diplomas from approved schools (page 51), may present their grades in any subject, but the acceptance of these grades in place of an examination in that subject rests wholly in the will of the Professor of the subject.

**Advanced Standing:**

Claims for advanced standing, in order to receive recognition, must be made by the student within one semester after entrance; of his fitness for advanced work he must satisfy, by examination or otherwise, the Professor of the subject in which he wishes to take work higher than the Freshman.

**Special Students:**

Special students will be admitted to the University without passing the regular examination required for entrance under the following conditions: (1) They must be at least 21 years of age; (2) they must show good reason for not taking a regular course; (3) they must pass such examination or

other tests as shall demonstrate fitness to pursue profitably all the studies in the course selected by them; (4) they will not be allowed to take work in more than two subjects with such kindred work as the head professors may suggest; (5) the advisory committee for each special student shall consist of the head professor or professors with whom the student desires to pursue work.

**Graduate Students :**

Students holding academic degrees from reputable institutions will be admitted to advanced undergraduate and to graduate courses upon application to the Committee on Graduate Degrees, and presentation of their diplomas in evidence. By special permission of the Faculty, persons of liberal education, who are not academic graduates, may be admitted to graduate courses. See announcement of the "Graduate Department."

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**CONDITIONS FOR THE APPROVAL OF SCHOOLS.**

Hereafter schools will be approved upon the adoption of the following course, and the sign that this course has been adopted will be an agreement between the University and the school authorities. This agreement is to be signed on the one hand by the President of the University, and on the other hand by the Principal of the High School, the President of the School Board, and the Superintendent of Public Schools of the town in which the High School is situated. In the case of Private Schools or Colleges, it should be signed by the Principal or President, and by the President of the Trustees. Printed copies of this agreement will be sent to any school seeking approval. It specifies—

1. That the school authorities have made their course of study meet fully the requirements proposed by the University.
2. That the first diploma issued under the new course of study will bear a specified date.
3. That the employment of inefficient teachers in the school will at any time justify the University in severing the relation.
4. That the University on its part will, after the date specified, admit without examination to the Freshman class in any Course for which they have been duly prepared, such graduates of the school as bring proper credentials of the fact that they are recommended for that class by the school authorities; and it will admit free of tuition for the first year the student graduating from the school with the highest honors. The credentials will be (1) the diploma of the school; (2) a certificate from the Superintendent or the Principal stating that the diploma was won in a



course for which the school had been approved. Forms of certificates are furnished by the University.

5. That the University will send from time to time representatives of the Faculty to visit the school, and will endeavor to promote, in every way possible, its welfare.\*

It is distinctly understood that the Course of Study outlined below is a minimum course. It is earnestly hoped that all the Secondary Schools of Missouri will soon be able to make their courses four years long. Many branches of study usually taught in Secondary Schools are not mentioned below. The Course prescribed gives not what should be taught in these Schools, but merely the minimum required by the University for entrance to its Freshman class.

1. *Latin*, not less than five (5) periods a week, continued not less than three (3) years.

In this time it is expected that the student will acquire such a vocabulary and such a knowledge of inflections and syntax as to be able to read readily simple Latin prose, with accurate quantitative pronunciation of the words. The best method of reaching these results cannot be given here. They will be found fully stated in the "Report of Committee on Secondary Schools" in the section on Latin. It may be said, however, that correct pronunciation in the teacher is indispensable to correct pronunciation in the pupil, and that in the acquisition of a vocabulary and the mastery of inflections, nothing can take the place of the frequent reviews.

It is expected that the student in three years will read five books of Cæsar's *Gallie War* and four of Cicero's *Orations*. For two books of the *Gallie War*, eight books of Eutropius or an equivalent in time of the *Viri Romæ* may be substituted where it is preferred.

If the students are immature, it will be found best to use some simple beginner's book, and to follow this by Eutropius or *Viri Romæ* as a bridge to Cæsar. If, however, the students are mature, it will be found that no bridge to Cæsar is needed, provided that some strong beginner's book is used and the students are required to master it before taking up Cæsar.

The reading should be accompanied by a careful and systematic review of grammatical forms, and by a study of the leading principles of syntax. At least one exercise a week should be given to rendering English into Latin. The Roman method of pronunciation is strongly recommended, and teachers are urged to give strict attention to accurate pronunciation according to quantity from the outset. Students will be admitted who have not been trained in the Roman method; but they will work at a great disadvantage throughout the entire course. The Mythology of Greece and Rome and the History of the Roman people should be carefully taught. Map-

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\*The University has now a regularly appointed representative in the Examiner of Schools. See page 53.



drawing is invaluable for impressing upon the mind the geography of the Ancient World.

2. *English*, not less than five (5) periods a week, continued not less than three (3) years. It is recommended that one-half of the time allotted to English be given to the study of literature, by which is meant not the study of a manual on the history of literature, but literature itself in the selected works of representative authors. Masterpieces, as a whole, suited to the attainments of the class, should be read in class and carefully examined, while other works may be assigned as collateral reading, of which written reports should be required.

In the first year, along with the literature, frequent practice in composition, with or without a text-book on Rhetoric, is strongly urged.

In the second year, the literature is to be continued throughout, and with the exercises in Composition, formal Rhetoric may be introduced, or if previously begun, continued. In the teaching of Composition and Rhetoric, chief emphasis should be thrown upon practice in writing. If formal Rhetoric is taught as a separate discipline, it should be of an elementary character, and contributory to the Composition.

In the third year, along with literature and composition, grammar, based on historical principles, might be profitably studied. In case English is extended through 4 years, such grammatical study, in our judgment, should be postponed until the last year.

In the fourth year, in connection with a wider range of reading in literature, an outline or syllabus or a brief history of the literature may be conveniently used, but, possessing little or no culture value, it should always be subordinated to the study of literature itself, and reserved, if used at all, for the last year of the course.

If only three years be given to English, the course outlined for these three years will have taken into view English (1) as a means of expression, (2) as a literature, (3) as a language—all so intimately connected, however, that the proper study of each will bear indirectly upon the other two.

NOTE.—Excellent and inexpensive editions in English and American Classics are now offered by many of our publishing houses. The teacher of English will, doubtless, have a preference for one or another of these series, or for some works of one series and some of another. Meiklejohn's Grammar, in lieu of a better work, or Whitney and Lockwood's, or Longman's from Part II, will be found suitable for this course.

3. *Mathematics*, not less than five (5) periods a week, continued not less than three (3) years, and devoted exclusively to Algebra and Geometry. Any other study in Mathematics given in addition to these must be given in additional time. In these three years it is expected that the student will finish Algebra and Plane Geometry. We require the full equivalent of what is contained in Smith's Elementary Algebra and Wentworth's or Bowser's Plane Geometry. Bright students under good instruction will be able to finish in the three years the Algebra, Plane Geometry and several

books (if indeed not the whole) of Solid Geometry. For the fourth year we recommend that Solid Geometry be completed, and also Plane Trigonometry.

The following text-books on Algebra and Geometry are especially recommended: Hall & Knight's Elementary Algebra, revised by Prof. Sevenoak, published by the Macmillan Co.; Chauvenet's Geometry, published by J. B. Lippincott Co.

4. *Science*.—It is expected that not less than five (5) periods a week for an entire year be given to each of two sciences. Of the five periods, at least three (3) should be devoted to laboratory work. For this no outside preparation is required of the pupil. The remaining periods may be given to text-book work and lectures, and experiments illustrating the text. The two Sciences must be taken from this group—Biology (Botany and Zoology), Physics and Chemistry. If Biology be chosen, half a year may be given to Botany and half a year to Zoology; but we recommend that the whole year be given to either one or the other of these branches of the subject. We *recommend* that every school teach all three of these sciences, and more over provide good instruction in Physical Geography and Meteorology.

NOTE.—During the summer of 1897 a School of Science will be conducted at the University, in which Laboratory courses of six weeks each will be given in Biology, Physics and Chemistry. These courses are designed to prepare teachers to give instruction in these sciences in the Secondary Schools of the State, and especially in those schools which are approved by the University or which are seeking approval. For further particulars see Appendix I.

5. *History*, not less than five (5) periods a week for two (2) years. The first year shall be devoted to General History equivalent to the work given in Myer's General History. The second year shall be devoted to the History of England and of the United States equivalent to the work given in Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution."

It is impossible to understand the life, the literature or the institutions of the ancient world without an accurate study of Mythology. We therefore recommend that every school make provision for this most important study. Some schools may see fit to combine it with the study of History, others with that of Literature, and others may prefer to give four periods a week to Latin or Greek, and the fifth period of each week to Mythology. Other schools may provide for it in other ways. But, in our opinion, no school should, under any condition, omit adequate treatment of the subject. There are some excellent text-books. We especially recommend Guerber's "Myths of Greece and Rome." Invaluable auxiliary reading may be found in Church's Stories from Homer, Virgil, Herodotus, the Greek Tragedians, etc. Any school would be amply repaid by adding to its library, without further inquiry, any book of stories bearing the name of Alfred J. Church. Some of them are in Macmillan's School Library, and

most of them are published by Dodd, Mead & Co., New York. Teachers of the classics find in them quite as much pleasure as their pupils.

6. *Greek*, not less than five (5) periods a week for not less than two (2) years.

In this time the student is expected to learn thoroughly the declension of nouns and adjectives, the conjugation of verbs and the ordinary principles of syntax. He should be able to read with facility ordinary Greek prose, such as Xenophon's *Anabasis*, and to translate easy sentences from English into Greek. The knowledge of the accent must be insisted on. To secure this end, we recommend for the first year:

White's First Greek Book and Gleason's Gate to the *Anabasis*, Ginn & Co., Chicago.

For the second year:

Goodwin's Greek Grammar (Ginn & Co., Chicago); Xenophon's *Anabasis* (three books), Harper and Wallace (American Book Co., Chicago); Woodruff's Greek Prose Composition (Leach, Shewell & Sanborn, Boston).

This requirement is made of those schools only which desire to prepare students for the Freshman class of the A. B. course.

Any school that gives two years' instruction in Greek, as outlined above, may omit all instruction in Science; but we strongly *recommend* that every school, besides teaching Greek, give at least one year to thorough work in at least *one* of the Sciences mentioned above under No. 4. For the A. B. course, Biology will prove most valuable.

7. *Modern Languages*.—Schools which prepare students for the B. S. course or for the Engineering courses should give two years' work in German or two years' work in French, instead of two years' work in Latin.

The requirements in French or German represent an amount of knowledge which should be gained by two years of consecutive study, five times a week. Thorough acquaintance with the elements of the grammar is of course expected. In addition, a considerable amount of proficiency in translating at sight into English will be required. To obtain this proficiency, students must have careful and systematic training in reading at sight, and this should be begun during the first months of study. In addition to the above, a good pronunciation is insisted on.

In German, Thomas's Grammar is recommended; in French, Grandgent's, Chardenal's (Allyn & Bacon) or Edgren's are the best. To use Grandgent's Grammar intelligently, the teacher should have special instruction as to the meaning of the phonetic signs used. As for texts, nearly all the publications of the following firms are recommended as excellent: Ginn & Co., Holt & Co., Heath & Co., Allyn & Bacon, W. R. Jenkins, Macmillan, Christopher Sower & Co. (Philadelphia).

We earnestly recommend that under no circumstances shall any school require of its pupils more than 20 periods of work a week demanding preparation. We think less than this advisable. Ample time should be given

for reading, and every Secondary School should contain a good library as well as good laboratories. A library may be rather small and still good. If possible, a librarian should be employed to do nothing else but keep the books and help the pupils in their choice of reading matter.

By a "period" we mean 40 minutes of time devoted to actual teaching, with 5 minutes more for changing class—the total 45 minutes.

By "session" we mean about 9 months.

This is all in amount that for the present at least the University requires for approval; but as to teachers, we strongly recommend that English and Latin on the one hand and Mathematics and Science on the other hand be taught by graduates of Universities or Colleges of unquestionable reputation; or by those who have taken equivalent courses in these subjects.

Schools should provide rooms, fixtures and apparatus suitable for laboratory work, without which it is impossible to teach science well; but it should be remembered that in the equipment of a laboratory the first step is to secure a thoroughly competent teacher. If it be desired, the University will gladly forward information about the proper equipment of laboratories, or will even send a Professor to aid the school in completing its original outfit.

It is of great importance that only good text-books be used, and information about them is always cheerfully given.

All of the courses recommended by the "Committee of Ten" involve the study of at least one Modern Language. In the teaching of Modern Languages, we desire to emphasize the importance of thorough and accurate drill in pronunciation. In Greek, the pronunciation should be strictly according to the printed accent, and in both Latin and Greek much pains should be taken from the first to distinguish in pronunciation short and long syllables. Phonology is of great importance in the study of languages.

APPROVED SCHOOLS.

Approved for B. L., & B. S. Courses.

| School.                                    | Sup't and Principal.          |
|--|-------------------------------|
| Appleton City Academy, Appleton City, Mo.. | G. A. Thielman.....           |
| Bethany High School.....                   | J. R. Hale.....               |
| Bolivar High School.....                   | Cary T. Wright.....           |
| Carthage High School.....                  | { W. T. Stephens.....         |
|  | { E. E. Dodd.....             |
| Carrollton High School.....                | { L. W. Rader.....            |
|  | { Mrs. R. R. Quisenberry..... |
| Ft. Smith High School, Ft. Smith, Ark..... | J. L. Holloway.....           |
| Harrisonville High School.....             | A. F. Treagle.....            |
| Higginsville High School.....              | H. B. Walker.....             |
| Independence High School.....              | { Wm. F. Bahlman.....         |
|  | { Wm. L. C. Palmer.....       |
| Joplin High School.....                    | { W. B. Brown.....            |
|  | { J. D. Elf.....              |
| Lamar High School.....                     | W. H. Martin.....             |
| Lancaster High School.....                 | W. C. Thompson.....           |
| Louisiana High School.....                 | { A. P. Settle.....           |
|  | { R. R. Rowley.....           |
| Maryville High School.....                 | { A. E. Clarendon.....        |
|  | { B. F. Duncan.....           |
| Miami High School.....                     | E. E. Barnett.....            |
| Mexico High School.....                    | { D. A. McMillen.....         |
|  | { O. K. Brown.....            |
| Moberly High School.....                   | { J. A. Whiteford.....        |
|  | { H. H. Holmes.....           |
| Monroe City High School.....               | R. S. Nichols.....            |
| Mound City High School.....                | J. P. Coleman.....            |
| Montgomery City High School.....           | L. J. Hall.....               |
| Nevada High School.....                    | W. J. Hawkins.....            |
| Paris High School.....                     | W. D. Christian.....          |
| Richmond High School.....                  | { J. M. Baily.....            |
|  | { J. E. Dunn.....             |
| Rockport High School.....                  | B. F. Brown.....              |
| Shelbina High School.....                  | J. T. Vaughn.....             |
| Slater High School.....                    | G. W. Newton.....             |
| Springfield High School.....               | { J. Fairbanks.....           |
|  | { W. T. Carrington.....       |
| Trenton High School.....                   | { H. E. DuBois.....           |
|  | { E. M. Painter.....          |
| Westport High School.....                  | { S. A. Underwood.....        |
|  | { Sarah E. Steele.....        |

Approved for A. B. Course.

|   |                    |
|---|--------------------|
| Brookfield College, Brookfield, Mo..... | M. H. Reaser.....  |
| Mt. Vernon Academy, Mt. Vernon, Mo..... | G. H. Pollard..... |

Approved for B. L. and A. B. Courses.

|  |                 |
|--|-----------------|
| Marionville Collegiate Institute, Marionville. | M. L. Curl..... |
|--|-----------------|



Approved for all Courses.

| School.                                     | Sup't and Principal.         |
|---|------------------------------|
| Buchanan College, Troy, Mo.....             | W. F. Roberts.....           |
| Butler Academy, Butler.....                 | John W. Richardson.....      |
| Cameron High School.....                    | { B. Riggs.....              |
| Chillicothe High School.....                | { Miss Bertha Ensign.....    |
| Clinton High School.....                    | { W. F. Jamison.....         |
| Culver Military Academy, Culver, Ind.....   | { S. E. Stout.....           |
| Columbia High School.....                   | { C. B. Reynolds.....        |
| Hannibal High School.....                   | { Mrs. C. C. Price.....      |
| Kansas City High School.....                | A. F. Fleet.....             |
| Kemper Family School, Boonville, Mo.....    | R. H. Emberson.....          |
| Kirkwood High School.....                   | { R. B. Simonson.....        |
| Michigan Military Academy, Orchard Lake..   | { Miss Gertrude Ashmore..... |
| Marshall High School.....                   | { J. M. Greenwood.....       |
| Sedalia High School.....                    | { John T. Buchanan.....      |
| St. Joseph High School.....                 | T. A. Johnson.....           |
| St. James Mil. Academy, Macon City, Mo..... | W. S. Dearthmont.....        |
| St. Louis High School.....                  | W. H. Butts.....             |
| University Academy, Columbia, Mo.....       | { T. E. Spencer.....         |
| Wentworth Mil. Academy, Lexington, Mo....   | { C. A. Snodgrass.....       |
| Woodson Institute, Richmond.....            | { G. V. Buchanan.....        |
|   | { J. D. Wilson.....          |
|   | { Edward B. Neely.....       |
|   | { C. E. Miller.....          |
|   | F. W. Bles.....              |
|   | { F. Louis Soldan.....       |
|   | { Wm. J. S. Bryant.....      |
|   | G. H. Beasley.....           |
|   | Sanford Sellers.....         |
|   | B. G. Shackelford.....       |

Where two names are given, the first is that of the Superintendent and the second that of the Principal.

#### Changes in Approved Schools :

Since the publication of the last Catalogue, the following changes have been made in the list of "Approved Schools:"

Butler Academy (Butler), Culver Military Institute (Culver, Indiana), Woodson Institute (Richmond, Mo.), have been added to the list of schools approved for all courses.

The High Schools of Kirkwood, Marshall and Sedalia, which were approved for B. S. and B. L. courses only, are now approved for all courses, and Marionville Collegiate Institute, which was approved for A. B. course only, is now approved for A. B. and B. L. courses.

#### Normal Schools :

Graduates of the three State Normal Schools in the advanced course of study as recently established will be admitted to the University without examination and permitted to enter those classes in any subject for which, in the judgment of the head Professor, they are prepared. The University, as is well known, has no classes below the Freshman.



**Examiner of Schools:**

The position of Examiner of Schools has been established by the Board of Curators to facilitate the work of bringing the secondary schools into close connection with the University. Mr. J. M. White of Carthage entered upon the duties of this office at the beginning of the year. Superintendent Kirk, in the 47th "Report of the Public Schools," speaks as follows of this office: "I look upon the office of High School Examiner for the University as one of the most important ever created by that institution. It will, without doubt, aid in bringing all secondary schools into more intimate and definite relation with the University and with other institutions of high learning."

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## ACADEMIC COURSES.

In the Academic department there are three courses of study, one leading to the degree of Bachelor of Arts (A. B.), one to the degree of Bachelor of Letters (B. L.), and one to the degree of Bachelor of Science (B. S.). In the A. B. course, prominence is given to Classics and Philosophy; in the B. L. course, to Modern Languages (including English), History, and Political Economy; and in the B. S. course, to Mathematics and the Sciences. On reaching the Junior year, the candidate for a degree in any course chooses, in addition to the prescribed work, such work as he may prefer.

Taking as the unit one hour a week for one semester, the electives in the A. B. course amount to 38 hours, in the B. L. course to 41 hours, and in the B. S. course to 44 hours.

The student may apply his electives to any Academic elective course for which he is prepared, or to any regular Academic study not required in the course that he is pursuing, or to any of the following courses offered in other Departments:

*From the Normal Department:* Pedagogy, for not more than three hours a week for two semesters.

*From the School of Agriculture:* Entomology, for not more than three hours a week for two semesters.

*From the Medical Department:* Anatomy or Physiology from the First Year, or both, or Bacteriology from the Second Year, for not more than six hours a week for two semesters.

*From the School of Engineering:* Thermodynamics, for not more than two hours a week for one semester; Descriptive Geometry, Electrical Measurements, each for not more than four hours a week for one semester; Applied Mechanics, for not more than four hours a week for two semesters; Astronomy, for not more than five hours a week for one semester; and Mathe-

mathematical Theory of Stresses, for not more than three hours a week for one semester.

The maximum time, however, given to courses in other Departments must not exceed twelve hours for one semester.

In the Junior or the Senior year, furthermore, Academic students may take Elocution three hours a week for two semesters, and receive a credit toward the Academic degree of one hour's work for each semester.

The student may give all his electives to one study, or divide the time as he may deem proper among the eligible studies.

When the student has elected a subject that he has not studied before, he must pursue it for at least two semesters unless the subject is completed in less time. Electives are open only to Juniors, Seniors, and Graduates. Juniors and Seniors who have Freshman or Sophomore work to make up must, in making out their cards, give such work precedence over elective work. A student who is behind his class in one or two subjects, or has been conditioned or failed to pass in any subject, may make up in the summer school, work not exceeding, in any one summer, the equivalent of four (4) hours for one semester of lecture-room work or six (6) hours for one semester of laboratory work (see Appendix I.)

Students may not change from one course to another in a session without permission of the Faculty.

### SCHEME OF STUDIES.

| A. B.                            |                            | B. L.                            |                            | B. S.                            |                               |
|----------------------------------|----------------------------|----------------------------------|----------------------------|----------------------------------|-------------------------------|
| <i>Freshman, First Semester</i>  |                            | <i>Freshman, First Semester</i>  |                            | <i>Freshman, First Semester</i>  |                               |
| 8:30.                            | English, M. F. . . . . 2   | 8:30.                            | Eng., T. Th. S. . . . . 3  | 8:30.                            | Eng., M. F. . . . . 2         |
| 9:30.                            | Latin, T. W. Th. . . . . 5 | 8:30.                            | Ger. or Fr., M. . . . . 3  | 8:30.                            | Ger. or Fr., T. . . . . 3     |
| 10:30.                           | Greek, M. T. Th. . . . . 4 | 9:30.                            | Latin, T. W. Th. . . . . 5 | 9:30.                            | Chem., M. W. . . . . 2        |
| 10:30.                           | Science, M. M. . . . . 4   | 9:30.                            | or F. S. . . . . 4         | 10:30.                           | Biology, W. F. . . . . 2      |
| 11:30.                           | Math., T. Th. S. . . . . 3 | 10:30.                           | Science, M. M. . . . . 4   | 11:30.                           | Math., M. T. Th. . . . . 5    |
|                                  |                            | 11:30.                           | Math., T. Th. S. . . . . 3 | 1:30.                            | Biol. Lab., Th. S. . . . . 2  |
|                                  |                            |                                  |                            | 1:30.                            | Chem. Lab., T. W. . . . . 2   |
| <i>Freshman, Second Semester</i> |                            | <i>Freshman, Second Semester</i> |                            | <i>Freshman, Second Semester</i> |                               |
| 8:30.                            | English, M. F. . . . . 2   | 8:30.                            | Eng., T. Th. S. . . . . 3  | 8:30.                            | English, M. F. . . . . 2      |
| 9:30.                            | Latin, T. W. Th. . . . . 5 | 8:30.                            | Ger. or Fr., M. . . . . 3  | 8:30.                            | Ger. or Fr., T. Th. . . . . 3 |
| 10:30.                           | Greek, M. T. Th. . . . . 4 | 9:30.                            | Latin, T. W. Th. . . . . 5 | 9:30.                            | Chem., M. W. . . . . 2        |
| 10:30.                           | Science, M. M. . . . . 4   | 9:30.                            | or F. S. . . . . 4         | 10:30.                           | Biology, W. F. . . . . 2      |
| 11:30.                           | Math., T. Th. S. . . . . 3 | 10:30.                           | Science, M. M. . . . . 4   | 11:30.                           | Math., M. T. Th. . . . . 5    |
|                                  |                            | 11:30.                           | Math., T. Th. S. . . . . 3 | 1:30.                            | Biol. Lab., Th. S. . . . . 2  |
|                                  |                            |                                  |                            | 1:30.                            | Chem. Lab., T. . . . . 2      |

## SCHEME OF STUDIES—Continued.

|  |   |   |
|--|---|---|
| <b>Sophomore, First Semester</b><br>8:30. Math. or Sci., T.<br>Th. S. .... 3<br>9:30. Greek, T. W. Th.<br>F. S. .... 5<br>10:30. Ger. or Fr., M. W.<br>F. .... 3<br>10:30. Eng., T. Th. S. ... 3<br>11:30. Latin, M. T. Th.<br>F. .... 4 | <b>Sophomore, First Semester</b><br>8:30. Eng. Hist., M. W. 2<br>8:30. Math. or Sci., T.<br>Th. S. .... 3<br>9:30. Ger. or Fr., M.<br>W. F. .... 3<br>10:30. Eng., T. Th. S. ... 3<br>10:30. Gen. Hist., M. W.<br>F. .... 3<br>11:30. Latin, M. T. Th.<br>F. .... 4               | <b>Sophomore, First Semester</b><br>8:30. Math., T. Th. S. 3<br>8:30. Eng. Hist., M.<br>W. .... 2<br>9:30. Ger. or Fr., M.<br>W. F. .... 2<br>10:30. Phys., M. W. .... 3<br>10:30. Eng., T. Th. S. ... 3<br>11:30. Mineral., M. T.<br>Th. F. .... 1<br>1:30. Phys. Lab., F. ... 4 |
| <b>Sophomore, Sec'd Semester</b><br>8:30. Ger. or Fr. or<br>Physiol. M. W.<br>F. .... 3<br>9:30. Greek, M. T. W.<br>Th. F. S. .... 6<br>10:30. Eng., T. Th. S. ... 3<br>11:30. Latin, M. T. W.<br>F. S. .... 5                           | <b>Sophomore, Sec'd Semester</b><br>8:30. Political Hist.,<br>M. W. .... 2<br>9:30. Ger. or Fr., T.<br>Th. S. .... 3<br>10:30. Gen. Hist., M. W.<br>F. .... 3<br>10:30. Eng., T. Th. S. ... 3<br>11:30. Latin, M. T. W.<br>F. S. .... 5<br>2:00. Social Science,<br>T. Th. .... 2 | <b>Sophomore, Sec'd Semester</b><br>9:30. Ger. or Fr., T.<br>Th. S. .... 3<br>10:30. Phys., M. W. F. ... 3<br>10:30. Eng., T. Th. S. ... 3<br>11:30. Geol., M. T. Th. F 4<br>11:30. Math. or Sci., M.<br>W. F. .... 3<br>1:30. Phys. Lab., W. S. 2                                |
| <b>Junior, First Semester</b><br>8:30. Greek, T. Th. S. 3<br>9:30. Philosophy, M.<br>W. F. .... 3<br>10:30. Ger., M. W. F. ... 3<br>10:30. French, T. Th. S. 3<br>Elective ..... 4   | <b>Junior, First Semester</b><br>9:30. Phil., M. W. F. 3<br>or<br>11:30. Econ., M. W. F. 3<br>10:30. Fr. or Ger., T. Th<br>S. .... 3<br>11:30. Eng., T. Th. S. ... 3<br>Elective ..... 7  | <b>Junior, First Semester</b><br>9:30. Phil., M. W. F. ... 3<br>10:30. Fr. or Ger., T.<br>Th. S. .... 3<br>11:30. Astro., M. W. F. 3<br>Elective ..... 7  |
| <b>Junior, Second Semester</b><br>8:30. Greek, T. Th. S. 3<br>9:30. Philosophy, M.<br>W. F. .... 3<br>10:30. Ger., M. W. F. ... 3<br>10:30. French, T. Th. S. 3<br>Elective ..... 4  | <b>Junior, Second Semester</b><br>9:30. Phil., M. W. F. ... 3<br>or<br>11:30. Fin'ce M. W. F. 3<br>10:30. Fr. or Ger., T.<br>Th. S. .... 3<br>11:30. Eng., T. Th. S. ... 3<br>Elective ..... 7  | <b>Junior, Second Semester</b><br>9:30. Phil., M. W. F. ... 3<br>10:30. Fr. or Ger., T.<br>Th. S. .... 3<br>11:30. Astro., M. W. F. 3<br>Elective ..... 7   |
| <b>Senior, First Semester</b><br>Elective ..... 15   | <b>Senior, First Semester</b><br>11:30. Fr. or Ger., T.<br>Th. S. .... 3<br>Elective ..... 12   | <b>Senior, First Semester</b><br>Elective ..... 15  |
| <b>Senior, Second Semester</b><br>Elective ..... 15  | <b>Senior, Second Semester</b><br>Elective ..... 15   | <b>Senior, Second Semester</b><br>Elective ..... 15   |

*Notes on the Scheme of Studies.*—1. Students in the A. B. and B. L. courses may elect in their Freshman year, four hours a week of any one of the following Sciences for which they are prepared: Physics, Chemistry, Geology, Mineralogy, Biology, Astronomy.

2. Students in the B. L. course may substitute for Analytical Geometry, in the first semester of their Sophomore year, three hours a week of any

one of the Sciences named above. The same permission is given to students in the B. S. course in the second semester of the Sophomore.

3. Students in the A. B. and B. L. courses that wish to continue the study of Mathematics throughout the Sophomore year may do so with the consent of the Faculty, by temporarily omitting some required study.

4. In any course, the time required for French and German may be divided by the student at his pleasure, provided he do not give to either of these languages less than two semesters.

5. Military Science and Tactics may be taken in addition to 18 hours a week of other subjects.

6. The figure after each study indicates the number of recitations or lectures or laboratory exercises each week.

7. Without consent of the Faculty, students are not allowed to take work in more than five subjects, unless the course is such as to require it. The subjects intended are such as English, Latin, French, Philosophy, Chemistry, etc.

## ACADEMIC STUDIES.

## English.

Professor ALLEN; Assistant Professors PENN and BELDEN.

1. English Composition, with selected readings in American Literature. Lectures. Text-book, exercises, and themes. Sections I and II, *T. Th. S.*, at 8:30; Sections III and IV, *M. F.*, at 8:30. Assistant Professors PENN and BELDEN. (Freshman.)
2. English Literature. *First Semester*, Chaucer to Milton; *Second*, Restoration to the present. Lectures. Parallel readings, and reports; essays on literary and historical subjects. *T. Th. S.*, at 10:30. Professor ALLEN and Assistant Professor BELDEN. (Sophomore.)
3. English Literature. Nineteenth Century. *First semester*, 1789-1830; *Second*, 1830-1890. Lectures. Readings, and weekly reports. *T. Th. S.*, at 10:30. Assistant Professor PENN. (Sophomore.)  
Open also as a Junior Elective.
4. English Literature. Eighteenth Century; from Restoration to French Revolution. *First semester*, Dryden and Pope; *Second*, Swift, and the Novelists. Lectures. Readings, and reports. *W. F.*, at 3. Assistant Professor BELDEN. (Junior Elective.)
- 5a. History of the English Language. Lectures and text-book. *First semester*, *T. Th. S.*, at 11:30. Professor ALLEN. (Junior.)
- 5b. Study of Modern Prose Style, based upon master-pieces of representative authors. Essays, and reports. *Second semester*, *T. Th. S.*, at 11:30. Professor ALLEN. (Junior.)
6. English Literature. Shakspeare. *First semester*, Six selected plays; reading and interpretation; detailed study of style. *Second semester*, Complete works. Lectures. Weekly reports; and occasional essays. *T. Th. S.*, at 3. Assistant Professor PENN. (Senior Elective.)

The first half of the course is equally open to Juniors; the second half must be preceded by the first or its equivalent.

- 14b. English Literature. English Drama, from beginnings to Restoration (1250-1660). Lectures. Selected plays, and reports; occasional essays. *Second semester, T. Th. S., at 3.* Assistant Professor PENN.

(Senior Elective.)

Course 14b alternates with second half of course 6. It was not given in 1896-7.

- 15a. American Literature. Lectures. Selected readings, and reports. *Second semester, T. Th. S., at 3.* Assistant Professor BELDEN.

(Junior Elective.)

7. Anglo-Saxon. Prose and Poetry. *W. F., at 11:30.* Professor ALLEN.  
(Senior Elective.)

8. Studies in Anglo-Saxon, based on Beowulf and the Wülker-Grein Bibliothek. *T. Th. S., at 3.* Professor ALLEN. (Graduate Elective.)

Course 7 or equivalent is required for admission to course 8.

- 9b. Higher Composition, and Principles of Versification. *Second semester, W. F., at 2.* Assistant Professor BELDEN. (Senior Elective.)

- 10b. Middle English. *Second semester, T. Th., at 8:30.* Professor ALLEN.  
(Senior Elective.)

11. Gothic. Introduction to Germanic Philology, with special reference to English. Wulfila. Lectures. *M. W. F., at 3.* Assistant Professor PENN.  
(Graduate Elective.)

The second half of the year may be given to Old Saxon (Heliand).

- 12a. The French Element in English. (Knowledge of Latin and French necessary.) *First semester, W. F., at 9:30.* Professor ALLEN.  
(Senior Elective.)

- 12b. Principles of English Etymology. *Second semester, W. F., at 9:30.* Professor ALLEN.  
(Senior Elective.)

- 13b. Teachers' Course. *First semester.* Professor ALLEN.

Required: For B. L., 1, 2 (or 3), 5a and 5b; for B S. and A B., the same except 5a and 5b.

Of the elective courses, 6, 14b, 10b, are open also to Juniors; and 8, 11, are primarily for graduates.

A special medal, known as the "McAnally medal," is offered for the best essay, thesis, or poem by members of the Senior class, competing under certain rules laid down by the founder of the prize. Subject for 1898: "Eugene Field."



## Latin.

Professor JONES; \*Assistant Professor BURNAM; Acting Assistant Professor CATRON; Mr. DANIELLS.

The following courses are offered:

1. Sallust and Virgil, with sight reading. *T. W. Th. F. S., at 9:30.* Professor JONES, Acting Assistant Professor CATRON, Mr. DANIELLS.

(Freshman.)

Text-books: Herberman's Cataline; Greenough & Kittredge's Virgil; Arnold's Revised Latin Composition; Allen & Greenough's Latin Grammar; Guerber's Myths of Greece and Rome.

2. Horace and Livy. *First Semester, M. T. Th. F., at 11:30; Second Semester, M. T. W. F. S., at 11:30.* Acting Assistant Professor CATRON.

(Sophomore.)

Text-books: Smith & Greenough's Horace; Lord's Livy; Grammar and Composition.

3. Cicero and Tacitus; Minute study of syntax and some attention to Latin Philology. *W. F., at 8:30.* Acting Assistant Professor CATRON.

(Junior Elective.)

Text-books: Hopkins' Tacitus; Tyrrell's Cicero; Reid's Cicero.

4. Sight-reading. *T. Th., at 9:30.* Professor JONES.

(Junior and Senior Elective.)

5. Terence and Plautus. *W. F., at 10:30.* Professor JONES.

(Junior Elective.)

- 6a. Course for expectant Latin teachers. *First Semester, M., at 8:30.* Professor JONES.

7. Critical study of a selected author. *T. Th. S., at 10:30.* Professor JONES.

(Graduate Elective.)

8. History of the Latin Language. Sounds, inflections, syntax. *W. F., at 8:30.* Professor JONES.

(Graduate Elective.)

9. Cicero de Re Publica and de Legibus; Gajus' or Justinian's Institutes. Lectures. Recitations and reports. *M. T. S., at 8:30.* Assistant Professor BURNAM.

(Junior Elective.)

10. Roman Public Law. Lectures. Recitations, and reports. *W. Th. F., at 8:30.* Assistant Professor BURNAM.

(Senior and Graduate Elective.)

Must be preceded by course 9. [Will not be given in 1897-8.]

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\*Absent for session of 1896-7.

11. Latin Paleography. Books, the makers and materials, in Antiquity and the Middle Ages; abundant practice in reading facsimiles of manuscripts. *M. W.*, at 9:30. Assistant Professor BURNAM.

(Graduate Elective.)

Courses 9, 10 and 11 were not given in 1896-7.

Courses 1 and 2 are required for the A. B. and B. L. degrees; all others are elective. The Roman method of pronounciation only is permitted.

## Greek.

Professor MANLY; Assistant Professor PICKARD.

1. Xenophon's *Anabasis*. *M. T. Th. S.*, at 10:30. Assistant Professor PICKARD. (Freshman.)
2. Homer, and Xenophon's *Memorabilia*. *First Semester*, Homer's *Iliad*, I-VI., *T. W. Th. F. S.*, at 9:30. *Second semester*, Xenophon's *Memorabilia*, *M. T. W. Th.*, at 9:30. (Sophomore.)
- 3b. Greek Literature. *Second Semester, F. S.*, at 9:30. (Sophomore.)
4. Euripides and Demosthenes. *T. Th. S.*, at 8:30. (Junior.)
5. Life of the Ancient Greeks. Assigned readings and reports. Lectures illustrated by maps, charts, photographs and stereopticon views. *M. W. F.*, at 2. Professor MANLY. (Elective.)  
 Knowledge of the Greek Language, while very desirable, is not indispensable for this course.
6. Homer's *Odyssey*. Rapid reading, lectures and papers on Homeric Antiquities. *W. F.*, at 11:30. Professor MANLY. (Elective.)
7. New Testament Greek. *T. Th. S.*, at 3. Professor MANLY. (Elective.)
8. Teacher's Course. The work will be specially adapted to students expecting to teach. *Two hours a week, both semesters*. Professor MANLY. (Elective.)
- 9a. Political Institutions of the Greeks. *First semester, two hours a week*. Professor MANLY. (Elective.)
10. Seminary for advanced study. *Two hours a week*. Professor MANLY. (Elective.)

Courses 1, 2, 3b, 4 are required for the A. B. degree.

## Classical Archæology.

Professor PICKARD.

The following courses are offered:

1. History of Greek Art. An introductory study of Assyrian and of Egyptian Art, followed by a special study of the development of Greek Architecture and Sculpture from the VII. Century B. C., to the I. Century A. D. *T. Th. S., at 3.*
2. Explanation of the masterpieces in the Museum of Casts. *One hour a week.*  
Open to all students of the University who desire to become acquainted with the finest works of art in the museum.
3. History of Renaissance Painting. *First semester*, Painting of the Netherlands and of Germany; *Second semester*, Italian Painting. *M. W. F., at 3.*
- 4a. "Homeric Art" or Art of Primitive Greece. Lectures based on the latest excavations and publications. *First semester, one hour a week.*
- 5b. Introductory Study of Greek Vases and Vase Paintings; based on Rayet and Collignon's "La Céramique Grecque." *Second semester, one hour a week.*
6. Etruscan and Graeco-Roman Art. *Two hours a week.*  
Study of Etruscan Art is based on Martha, "L' Art Etrusque."  
Study of Graeco-Roman Art is carried down to Byzantine times.
7. Topography and Monuments of Athens; based on a careful study of Pausanias. *Two hours a week.*
- 8a. The Greek Theatre; based on the new work on the Greek Theatre by Dr. Wilhelm Doerpfeld, Secretary of the German Archæological Institute at Athens. *First semester, two hours a week.*
9. Roman Life. *One semester, two hours a week.*  
A special study of the extant remains, particularly in Rome and Pompeii. No knowledge of Latin *required*.
10. Archæological Seminary. Interpretation of monuments and discussion of disputed points in the history of Greek art and Greek artists. *Two hours a week.*

All courses are elective. Course 7 alone *requires* a knowledge of Greek. Courses 7 and 10 are primarily Graduate electives.

### Museum of Classical Archæology.

An excellent beginning has been made in equipping a laboratory for the study of Classical Archæology. For this purpose the third floor of the west wing of Academic Hall, a room 110x36 ft., is fitted up. It is now supplied

with models of temples, illustrating the three orders of Greek Architecture, and with fifty plaster casts of the most famous specimens of Greek and Roman Art. These are arranged chronologically, and with them are hung one hundred and fifty framed photographs of other works of classic art. Besides these, the Museum possesses some one thousand photographs, and a fine collection of lantern slides.

## Romance Languages.

PROFESSOR WEEKS; MR. BRANDON.

### FRENCH.

1. Elementary course. French Prose and Composition. Grandgent's French Grammar, Rollin's Reader. Section I, *M. W. F.*, at 8:30; Section II, *T. Th. S.*, at 8:30. PROFESSOR WEEKS and MR. BRANDON.
2. Modern Fiction and Plays. Composition, Sight-reading. *M. W. F.*, at 9:30. PROFESSOR WEEKS.

This course is meant for the second year's study in French. Much ground will be covered, and especial attention paid to pronunciation. Several of the books read are here mentioned: Some one of Erckmann; Chatrian's better stories; Daudet's *La Belle Nivernaise* (Flammarion edition); de Musset's *Pierre et Camille*; Me. Greville's *Dosia*; About's *Le Roi des Montagnes*; Sandeau's *Mademoiselle de la Seigliere*; Scribe's *La Bataille de Dames*.

3. General View of French Literature. Rapid Reading. *T. Th. S.*, at 9:30. PROFESSOR WEEKS. (Junior Elective.)

This course is meant for the third year's study. A great deal of ground is covered; much pronouncing is done, very little translation. The course is conducted partly in French. Students do outside reading, and hand in written work in French. The first semester is devoted to the 17th and 18th centuries. One or more plays of the great classical dramatists are read, together with several orations of Bossuet. In the 18th century two of Voltaire's plays and one of Beaumarchais' are read. The second semester is devoted to the 19th century. A story and a play by Hugo are read, and among other things the following works: de Vigny's *Le Cachet Rouge*; Merimee's *Colombo*; About's *Le Roi des Montagnes*; de Bornier's *La Fille de Roland*; Labiche's *Moi* (Allyn & Bacon's edition); Coppee's *On Rend l'Argent*, and his *Le Pater*, (Holt & Co.); a volume of de Musset's Poems and two of his Proverbs.

4. The Classical Period of French Literature. *T. Th.*, at 10:30. PROFESSOR WEEKS. (Senior Elective.)

During the first semester Pascal's *Lettres Provinciales* will be read, with lectures on Jansenism. An ability to understand spoken French is a requisite for this course. During the remainder of the year, some subject desired by the students may be taken up. Last year the beginnings of French lyric poetry were read in this way.

5. Old French. Constan's *Chrestomathie*, with lectures in French. The class will read the greater part of *Aliscans*, edition of Guessard. *M. F.*, at 10:30. Professor WEEKS. (Graduate Elective.)

This course is meant for Graduates. Occasionally a Senior who has taken with high credit the preceding work and who is making a specialty of Romance Languages, is allowed to elect this course, which can be pursued advantageously for two successive years.

6. Course in French Composition. Outside reading. *T. Th. S.*, at 2. Mr. BRANDON.

This course is open to Sophomores and Juniors who are prepared to enter a course conducted in French.

#### ITALIAN.

1. Beginning Course. *T. Th. S.*, at 11:30. Mr. BRANDON. (Junior Elective.)

This course for the present can be given only in alternate years. No composition work is done. Grandgent's Italian Grammar is used. As soon as possible students begin to pronounce aloud without translating.

#### SPANISH.

1. Beginning Course. *T. Th. S.*, at 10:30. Professor WEEKS.

(Junior Elective.)

This course is parallel to the one in Italian, and the same methods are employed. The Grammar used is Knapp's.

#### PHONETICS.

- 1b. General Introduction to Philology. *Second semester, W. F.*, at 4. Professor WEEKS. (Graduate Elective.)

An effort is made in this course to get at the phenomena of speech sounds from a physiological standpoint.

## Germanic Languages.

Professor HOFFMAN; Miss RIGGS.

The following courses are offered:

1. German. Section I, *M. W. F.*, at 8:30; Section II, *T. Th. S.*, at 8:30. Miss RIGGS. (Freshman.)

Text-books: Thomas's Practical Grammar, Van Daell's Reader, Storm's Immensee, Gerstäcker's "Germelshansen," Schiller's "Der Neffe als Onkel."

2. German. Section I, *M. W. F.*, at 9:30; Section II, *T. Th. S.*, at 9:30. Professor HOFFMAN. (Sophomore.)

Text-books: Doktor Wespe by Benedix, Lessing's Minna von Barnhelm, Emilia Galotti, Harris's Prose Composition, Syntax.

3. German. *T. Th. S., at 10:50.* Professor HOFFMAN. (Junior.)  
Text-books: Goethe's Hermann und Dorothea, Egmont, Iphigenie, Von Klenze's German Lyrics, Buchheim's Prose Composition.
4. German. *T. Th. S., at 11:30.* Professor HOFFMAN. (Graduate Elective.)  
Text-books: Schiller's Wallenstein (complete), Victor von Scheffel's Ekkehard, Buchheim's Prose Composition; original composition work.
- 5a. Middle High German. *First Semester, M. W. F., at 11:30.* Professor HOFFMAN. (Graduate Elective.)  
Paul's Mittelhochdeutsche Grammatik; Wolfram von Escheubach. Lectures on the Literature of the M. H. German Period.
- 5b. Old High German. *Second Semester, M. W. F., at 3.* Professor HOFFMAN. (Graduate Elective.)  
Braune's Althochdeutsche Grammatik and Althochdeutsches Lesebuch.
6. German Literature of the XVIII and XIX Centuries. *T. Th. S., at 3.* Professor HOFFMAN. (Graduate Elective.)  
Courses 1, 2, 3 are required studies. Course 4 is open also to Seniors.  
Course 1 is a Freshman study for B. L. and B. S. students, but Sophomore for A. B. students. Course 2 is a Sophomore study for B. L. and B. S. students, but Junior for A. B. students.

## History.

Professor HICKS\*; Acting Professor LOEB.

The following courses are offered:

1. General History. Sec. I, *M. W. F., at 10:30*; Sec. II, *at 11:30.* (Sophomore.)
- 2a. History of England. *First semester*; Sec. I, *M. W., at 8:30*; Sec. II, *M. W., at 2.* (Sophomore.)
- 3b. Political History of the United States. *Second semester*; Sec. I, *M. W., at 8:30*; Sec. II, *M. W., at 2.* (Sophomore.)
- 4a. Politics, Historical and Comparative. *First semester, T. Th. S., at 2.* (Elective.)
- 5b. Theory of Jurisprudence. *Second semester, T. Th. S., at 2.* (Elective.)  
Course 5b should be preceded by course 4a.
6. Seminarium in History. *Two hours a week.* (Elective.)  
Required: For B. L., courses 1, 2a, 3b; for B. S., course 2a.  
Elective: All courses are elective.  
Undergraduate and Graduate: Courses 3a, 5b.  
Graduate: Course 6.

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\*Absent for session of 1896-7.



## Political Economy.

Professor HICKS\*; Acting Professor LOEB; Acting Assistant Professor HAMMOND.

The following courses are offered:

- 1b. Introduction to Social Science. *Second semester, T. Th., at 2.*  
(Sophomore.)
2. Theory of Economics and Finance. *M. W. F., at 11:30.* (Elective.)
3. Problems in Economics. *T. W. Th. F. S., at 3.* (Elective.)
4. Modern Financial Systems. *T. Th. S., at 11:30.* (Elective.)
- 5a. Industrial and Financial History of Missouri. *T. Th., at 2.* (Elective.)
6. Seminarium. Two hours a week. (Elective.)

Required: For B. L., course 1b.

Elective: All courses are elective.

Graduate: Courses 3, 4, 5a, 6.

## Philosophy.

Professor THILLY.

The following courses are offered:

1. Psychology and Logic. Sections I and II, *M. W. F., at 8:30 and 9:30;*  
Section III, *T. Th. S., at 9:30.* (Junior.)  
Required for A. B. and B. S. degrees. Text-books: James' Psychology, Briefer Course, and Jevons' Lessons in Logic.
2. Advanced Psychology. *M. W. F., at 10:30.* (Elective.)  
Course 2 must be preceded by course 1. Text-books: James' Psychology, advanced course; Ladd's Psychology, descriptive and explanatory; Wundt's Human and Animal Psychology; Külpe's Psychology.
3. Ethics. *First semester;* Introduction to Ethics. Lectures and Recitations.  
*Second semester;* A Study of the Works of Modern Moralists. Reports, discussions, and essays. *T. Th. S., at 2.* (Elective.)
4. History of Philosophy. Lectures, recitations, and private reading. *T. Th. S., at 10:30.* (Elective.)  
Text-book: Weber's History of Philosophy.

\*Absent for session of 1896-7.

5. Modern Criticism. A Study of the Development of the Critical Problem in Modern Times. *T. Th. S., at 8:30.* (Elective.)

Course 5 must be preceded by courses 1 and 4. Text-books: Locke's Essay concerning Human Understanding, Berkeley's Treatise on the Principles of Human Knowledge, Hume's Treatise on Human Nature, and Kant's Criticism of Pure Reason.

- 6a. Metaphysics. *First semester, T. Th. S., at 11:30.* (Elective.)  
Text-book: Paulsen's Introduction to Philosophy.

## Mathematics.

Professor TINDALL; Assistant Professors DEFOE and UPDEGRAFF.

- 1a. Trigonometry and Solid Geometry. *First semester, T. Th. S., at 11:30.*  
Assistant Professors DEFOE and UPDEGRAFF. (Freshman.)

Texts: Bowser's Trigonometry, Chauvenet's Geometry.

- 1b. Analytic Geometry. *Second semester, T. Th. S., at 11:30.* Professor TINDALL and Assistant Professor DEFOE. (Freshman.)

Text: Loney's Co-ordinate Geometry.

2. Advanced Algebra. *M. F., at 11:30.* Assistant Professor DEFOE. (Freshman.)

Text: Hall and Knight, revised by Sevenoak.

3. Analytic Geometry and Calculus. *T. Th. S., at 8:30.* Professor TINDALL and Assistant Professor DEFOE. (Sophomore.)

Texts: Loney's Co-ordinate Geometry, Byerly's Differential Calculus.

4. Theory of Equations and Determinants. *M. W. F., at 9:30.* Assistant Professor DEFOE. (Junior Elective.)

Texts: Burnside and Panton's Theory of Equations, and Gordon's Determinants.

5. Analytic Mechanics. *M. W. F., at 9:30.* Professor TINDALL or Assistant Professor DEFOE. (Junior Elective.)

Text: Loney's or Routh's Statistics and Dynamics.

6. Integral Calculus. *T. Th. S., at 9:30.* Professor TINDALL. (Junior Elective.)

Text: Byerly's Integral Calculus.

- 7a. Solid Analytic Geometry. *First semester, M. W. F., at 8:30.* Assistant Professor DEFOE. (Senior Elective.)

Text: Chas. Smith's Solid Geometry.

- 7b. Plane Analytic Geometry. *Second semester, M. W. F., at 8:30.* Professor TINDALL. (Senior Elective.)

Text: Loney's or Salmon's Co-ordinate Geometry.

8. Differential Equations. *T. Th. S., at 10:30.* Professor TINDALL.  
(Graduate Elective.)  
Text: Johnson's Differential Equations.
9. Higher Plane Curves. *M. W. F., at 10:30.* Professor TINDALL or Assistant Professor DEFOE.  
(Graduate Elective.)  
Text: Salmon's Geometrie Analytique.
10. Modern Higher Algebra. *T. Th. S., at 8:30.* Professor TINDALL or Assistant Professor DEFOE.  
(Graduate Elective.)  
Text: Serret's Cours d'Algebre Superleure.
11. Theory of Functions. *T. Th. S., at 11:30.* Professor TINDALL.  
(Graduate Elective.)  
Texts: Klein's Functionentheorie or Picard's Traite d'Analyse.
12. Theory of the Potential Function. *M. W. F., at 10:30.* Professor TINDALL.  
(Graduate Elective.)  
Texts: Peirce's Newtonian Potential Function and Duhem's Electrite et Magnetisme.  
  
Required: For B. L. and A. B., 1a, 1b; for B. S., 1a, 1b, 2, and the first half of 3; for the degree in Engineering, 1a, 1b, 2, 3, and 6.  
Courses 7a, 7b, 8, and 12, are especially recommended to students of Engineering.  
Of courses 4 and 5, and of courses 11 and 12, only one each will be given.

## Astronomy.

Professor UPDEGRAFF.

1. Popular Astronomy. Lectures, recitations, and occasional night observations. Treatment non-mathematical. *T. Th. S., at 11:30.*  
(Elective.)  
Text: Newcomb's Popular Astronomy, Library Edition.
2. General Astronomy. Lectures, recitations, and occasional night observations. *M. W. F., at 11:30.* (Junior.)  
Trigonometry required. Text: Young's General Astronomy.
- 3a. Practical Astronomy (For Seniors in Civil Engineering). Recitations, and practical work in the Observatory. *First semester, five hours a week.*  
Text: Doolittle's Practical Astronomy.
- 3b. Geodesy and Least Squares (For Seniors in Civil Engineering). Recitations, and practical work in the field. *Second semester, four hours a week.*  
Text: Gore's Geodesy.

4. Spherical and Practical Astronomy. Problems of Spherical Astronomy. Theory and practical use of instruments. *Three hours a week.*

(Junior Elective.)

Calculus required. Text: Chauvenet's Spherical and Practical Astronomy.

5. Spherical and Practical Astronomy. Continuation of Course 4. *Three hours a week.*

(Senior Elective.)

6. Theoretical Astronomy. Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*

(Graduate Elective.)

A thorough course in Calculus and Analytic Geometry is required. Text: Watson's Theoretical Astronomy.

Required: For B. S., Course 2; for B. S. in C. E., Courses 3a and 3b.

#### **The Laws Astronomical Medal :**

An engraved medal, called the "S. S. Laws Astronomical Medal," is offered annually to that member of the graduating class who stands highest in Astronomy, and has at the same time attained a high average of general scholarship. An original thesis written on some astronomical subject, and showing capacity for scientific investigation, is required.

#### **The Laws Observatory :**

The Observatory, a building 84 feet long from east to west, and from 14 to 30 feet wide, stands on an elevated portion of the University campus. The equipment consists of a  $7\frac{1}{2}$ -inch equatorial refracting telescope by Merz und Söhne, of Munich, a 2 1-10-inch transit instrument by Brunner, of Paris, an altitude and azimuth instrument of  $2\frac{1}{8}$  inches in aperture, sidereal and mean-time clocks, sidereal break-circuit chronometer, chronograph, sextant, micrometer, and a complete outfit of smaller instruments.

Both clocks and instruments are mounted on piers of solid masonry, isolated from the floors and walls of the buildings, and are provided with the usual electrical connections. The dome of the equatorial telescope is 18 feet in diameter, and a cone of 14 feet in diameter, which revolves on balls, shelters the altitude and azimuth instrument. The transit-room has three slits in the walls and roof for observation, and contains the transit instrument, chronograph and sidereal clock.

There is in the Observatory a valuable collection of astronomical books and pamphlets, and several of the best astronomical periodicals are regularly received and kept on file.

In the year 1880, Dr. S. S. Laws, then President of the University, contributed largely from his private funds toward the improvement of the Observatory building and instruments. In recognition of his generosity, the Board of Curators named the Observatory in his honor and founded the Laws Astronomical Medal.

# The University Academy

Columbia, Missouri.

INCORPORATED IN 1894.

The Academy is a school of the highest grade and was established to furnish a careful and critical preparation for the State University, for colleges and for schools of Technology.

Our courses are carefully planned for those who wish a thorough preparation for the business activities of life, and will not necessitate any further study in College or Technical Schools.

We also have courses arranged which will enable teachers to secure any grade of certificate offered in the State.

## A HOME SCHOOL FOR BOYS.

The Superintendent of the Academy—a teacher of many years of experience, and recently Principal of Marmaduke Military Institute, Sweet Springs, Mo.—will take into his family a limited number of boys. Their health, morals and education will receive careful and intelligent supervision in a refined and Christian home. The surroundings are healthful, helpful and homelike. Terms will be given on application.

## A BOARDING HALL FOR YOUNG LADIES.

In a building accessible to the School, good board and rooms at low cost, will be offered to the young ladies of the Academy. This will be their school-home, and will be under the supervision of the Principal and his wife. Parents may feel confident that their daughters will here receive kind and careful attention.

## THE ACADEMY DINING HALL.

The dining hall has been in successful operation for a year. The object is to furnish good board to our students at the lowest possible cost.

## A SUMMER SCHOOL.

Beginning early in June, a summer school of six weeks will be conducted by the Superintendent and Principal, to prepare students for the Autumn Examinations. These students can board and lodge at the Academy Boarding Hall, at a low cost.

## BUILDINGS AND EQUIPMENTS.

Our equipments and facilities for instruction are unsurpassed by any other preparatory school in the State.

We are well supplied with maps, charts and laboratory apparatus.

The proximity of the Academy to the University secures to our students advantages which no similar school in the State can claim. They have access to the magnificent library of the University, and enjoy many of the privileges of regular University students.

For further information and catalogue, address

JOHN B. WELCH, Superintendent.  
or GEO. H. BEASLEY, Principal.





## Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

1. Elements of Physics. Lectures, and recitations, *M. W.*, at 11:30; Laboratory, *S.*, at 1:30. Mr. GRIFFITH. (First Year Agriculture.)

2. Elements of Physics. Lectures, and recitations, *M. F.*, at 11:30; Laboratory, *T. Th.*, at 1:30. Mr. GRIFFITH. (First Year Medical.)

In this course special emphasis will be given to those parts of the subject most useful in Medicine.

3. Lectures and recitations on the more important principles of Physics. *T. S.*, at 11:30; Laboratory, *M. F.*, at 1:30. Mr. GRIFFITH. (Freshman.)

Elective in A. B. and B. L. courses. Recommended to those who wish to take a short course in Physics to prepare themselves to teach the subject in the High Schools. Teachers who have already had the text may elect the Laboratory alone.

4. General Physics. *First semester:* Lectures, and recitations, *M. W.*, at 10:30; Laboratory, *F.*, at 1:30. *Second Semester:* Lectures, and recitations, *M. W. F.*, at 10:30; Laboratory, *W. S.*, at 1:30. Professor LIPSCOMB. (Sophomore.)

Required in B. S. and in all Engineering courses; elective in A. B. and B. L. Texts: Carhart's University Physics; Laboratory, Nichols (Vol. 1).

- 5a. Special Laboratory work in Mechanics, Heat, and Light. *First semester,* *M. W. F.*, at 1:30. Professor LIPSCOMB or Mr. GRIFFITH. (Third Year Agriculture.)

- 6a. The Practical Application of Electricity in Medicine and Surgery. *First semester,* *T. Th. S.*, at 9:30. Professor LIPSCOMB. (Third Year Medical.)

Elective in all Academic courses. Text, Liebig & Rohe.

- 7a. The Theory of Heat. *First semester,* *T. Th. S.*, at 10:30. Professor LIPSCOMB. (Junior Elective.)

Required of Seniors in E. E. and M. E. Text, Maxwell.

- 7b. The Theory of Light. *Second semester,* *T. Th. S.*, at 10:30. Professor LIPSCOMB. (Junior Elective.)

The basis of the work in this course is Preston's Theory of Light.

- 8a. Experimental Work in Heat, Light and Electricity. *First semester,* *T. Th. S.*, at 1:30. Professor LIPSCOMB. (Senior Elective.)

- 8b. Mathematical Theory of Electricity and Magnetism. *Second semester,* *T. Th. S.* (Senior Elective.)

Courses 7a, 7b, 8a and 8b are open only to those students who have taken course 4 or its equivalent.

9. Laboratory. Advanced measurements and special investigations. *Two to five times a week.* (Graduate and Senior Elective.)

Open only to those who have had courses 4, 7a, 7b, 8a and 8b, or an equivalent amount of work.

## Chemistry.

Professor BROWN; Assistant Professor CALVERT; Instructor, Mr. DINSMOOR.

The following courses are offered:

1. Inorganic Chemistry. Experimental lectures, laboratory work, and recitations. Lectures, *M. W.*, at 9:30. Laboratory work and recitations, *M. W.*, at 1:30.
- 2b. Metallurgy. Lectures and recitations. *Second semester, three hours a week.*
3. Organic Chemistry. Lectures, laboratory work, and recitations. *Three hours a week.*
- 4a. Qualitative Chemical Analysis. Laboratory work, with lectures. *First semester, three hours a week.*
- 4b. Quantitative Chemical Analysis. Laboratory work. *Second semester, three hours a week.*
5. Advanced Laboratory Work. Inorganic and Organic. *Daily.*
- 6a. Organic Chemistry (Introductory Course). Lectures, laboratory work, and recitations. *First or second semester, three hours a week.*
- 7a. General Chemistry (for Medical Students). *First semester, T. W. F. S., at 1:30.*
- 8b. Organic Chemistry (for Medical Students). Lectures and recitations. *Second semester, three hours a week.*
- 9a. Toxicology. Lectures and recitations. *First semester, Th. S., at 11:30.*
- 10b. Chemical Theory. Lectures and recitations. *Second semester, three hours a week.*

For this course 1 and 6a should be taken.

- 11a. History of Chemistry. Lectures and recitations. *First semester, three hours a week.*

For this course 1 and 3, or 6a, should be taken.

- 12b. Physical Chemistry. Lectures, laboratory work, and recitations. *Second semester, three hours a week.*

Required for B. S., 1; for B. S. in C. E., M. E., and E. E., 1 and 2b; for B. Agr., 1; for M. D., 1, 7a, 8b and 9a.

Elective: All courses.

## Geology and Mineralogy.

Emeritus Professor BROADHEAD; Mr. MARBUT.

The following courses are offered :

1. Physiographic Geology. Lectures. Recitations, Laboratory, and Field Study. *Four times a week.* Mr. MARBUT. (Undergraduate Elective.)  
Open to all A. B. and L. B. Freshmen.
- 2a. Mineralogy and Crystallography. Recitations; Laboratory work. *First semester, M. T. Th. F., at 11:30.* Mr. MARBUT. (Sophomore.)  
One semester in Chemistry and one in Physics are required.
- 2b. Elementary Geology. Lectures. Recitations; Field and Laboratory work. *Second semester, M. T. Th. F., at 11:30.* Emeritus Professor BROADHEAD and Mr. MARBUT. (Sophomore.)
- 3a. Historical Geology. Lectures. Recitations from text, and Laboratory work. *First semester, three times a week.* Emeritus Professor BROADHEAD. (Junior Elective.)  
Open to students who have had course 2b, and courses in Elementary Botany and Zoology.
- 3b. Paleontology. Lectures. Laboratory, and Field work. *Second semester, three times a week.* Emeritus Professor BROADHEAD. (Junior Elective.)  
Open to students who have had course 3a, or its equivalent in some other school.
- 4a. Meteorology. Recitations, and study of weather charts. *First semester, three times a week.* Mr. MARBUT. (Junior Elective.)  
Open to all students who have had courses in Elementary Physics and Chemistry.
- 5b. Advanced Physiography. Advanced study in the evolution of land forms. Lectures. Laboratory and Field Work. *Second semester, three times a week.* Mr. MARBUT. (Junior or Senior Elective.)  
Open to students who have had course 1 or course 2b.
6. Crystallography. Study of the Morphological and Physical characters of crystals. *Three times a week.* Mr. MARBUT. (Undergraduate Elective.)  
This course is intended for those students who desire a more thorough knowledge of the subject than can be obtained in course 2a. A fair knowledge of Chemistry and Physics is required.
- 7b. Economic Geology. Lectures. Recitations, Field Work. *Second semester, T. Th. S., at 9:30.* Emeritus Professor BROADHEAD. (Junior Engineering.)  
May be elected by academic students who are prepared for it.

- 8a. American Archæology. Discussion of mounds and mound-builders, and pre-historic American races. *Monday, at 3.* Emeritus Professor BROADHEAD. (Elective.)
- 9b. Conchology. *Second semester, Fridays.* Emeritus Professor BROADHEAD. (Elective.)
10. Advanced Paleontology. Lectures. Field Work, and investigation in Missouri Paleontology. *Three hours a week or more*, at the pleasure of the student. Emeritus Professor BROADHEAD.  
(Senior and Graduate Elective.)  
Open to all students who have had course 3b.
11. Petrography. Lectures. Laboratory work; Microscopic study of rocks. *Three times a week.* Mr. MARBUT. (Senior and Graduate Elective.)

## Biology.

Professor AYERS; Mr. THOMPSON.

### GENERAL BIOLOGY AND ZOOLOGY.

2. General Biology. Lectures and Laboratory. *Four times a week.*  
(Freshman, and Undergraduate Elective.)
- 2a. Teacher's Course. In addition to the requirement in 2, all Normal students are required to devote one hour a week to the special study of methods of teaching, laboratory equipment, and the collection and preservation of materials.
8. Morphology of Animals. Lectures and Laboratory. *Four times a week.*  
(Undergraduate Elective.)
20. Investigations in Animal Morphology. *Time to be arranged with the Instructor.*  
(Graduate Elective.)  
For other courses in Animal Morphology see Announcement of the Medical Department.

### ANIMAL PHYSIOLOGY.

Professor CONNAWAY.

1. Beginning Physiology. One lecture and two laboratory exercises a week. *First semester.* (Sophomore.)  
For Academic, Normal and Agriculture students. Text: Martins' "The Human Body" (advanced course); Laboratory Manual: Foster and Langley's Practical Physiology.

1a. Teachers's Course. *First semester, one hour a week.*

This is auxiliary to Course 1, which should be taken concurrently. The purpose of this Course is to furnish instruction in methods of teaching Physiology, and to give the Normal students an opportunity of applying their knowledge. Each student is required to make special preparation upon some assigned topic, both as to the subject matter, and the methods of presenting it to school children of different ages. The laboratory demonstrations necessary to the proper presentation of the topic must be prepared by the student.

3. Advanced Physiology. The courses offered in the Medical Department are open to election by academic students who have sufficient training in histology, physics and chemistry. See announcement of Medical Department.

BOTANY.

Mr. THOMPSON.

The courses offered to Agricultural students are open to those who wish to elect this subject. See announcement of courses in the School of Agriculture.

BACTERIOLOGY.

Professor BOLTON.

The course offered for Medical students in Bacteriology is open to those who desire to take this study as an elective. See announcement of the Medical Department.

ENTOMOLOGY.

Professor STEDMAN.

The courses offered to Agricultural students are open to those who wish to elect this subject. See announcement of School of Agriculture.

APPLIED BOTANY.

Professor WHITTEN.

The courses offered to Agricultural students are open to those who wish to pursue this subject. See announcement of School of Agriculture.

**The Museum of Biology:**

Professor AYERS, Curator.

The biological collections consist, at present, of that part of the former collection saved from the fire, together with the biological portion of the Missouri exhibit at the World's Fair. These collections are housed in new fire-proof rooms, 46×100 feet, built especially for this purpose.

Catalogues of the Museum may be had on application.

Open on week days from 2 to 3 p. m.

## Elocution.

Professor SCOTT.

The work of the first semester will embrace: Breathing for conscious voice support; phonetics applied to enunciation, stress, inflection, quality, and quantity; phrasing; melody, intonation, and cadence; movement and rhythmus; foundation theory and practice in bearing and gesture; analysis of short prose and poetic passages, for the establishment of voice correlation with thought and feeling.

Text-book: G. L. Raymond's Orator's Manual.

The work of the second semester will comprise studies from Shakespeare and other poets; studies in the reading of didactic, descriptive, narrative, and impassioned prose; studies in forensic oratory, with constant review of principles.

Juniors and Seniors in the Academic Department may take Elocution as an elective three hours a week for one year, and receive a credit therefor of one hour a week for the two semesters. This subject may be elected by students in other departments, but does not count toward a degree.



## II. Normal Department.

### FACULTY.

RICHARD HENRY JESSE, LL. D.,

*President, and Professor of Ancient and Medieval History.*

JOSEPH PHILIP BLANTON, A. M.,

*Professor of Theory and Practice of Teaching.*

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

*Professor of Mathematics.*

JOHN CARLETON JONES, A. M., Ph. D.,

*Professor of Latin Language and Literature.*

EDWARD ARCHIBALD ALLEN, Litt. D.,

*Professor of English Language and Literature.*

HENRY CAPLES PENN, A. M.,

*Assistant Professor of English Language and Literature.*

GARLAND CARR BROADHEAD, M. S.,

*Emeritus Professor of Geology and Mineralogy.*

MILLARD LEWIS LIPSCOMB, A. M.,

*Professor of Physics.*

WILLIAM GWATHMEY MANLY, A. M.,

*Professor of Greek Language and Literature.*

MILTON UPDEGRAFF, M. S., B. C. E.,

*Professor of Astronomy, and Assistant Professor of Mathematics.*

†JOHN MILLER BURNAM, Ph. D.,

*Assistant Professor of Latin Language and Literature.*

†FREDERICK CHARLES HICKS, B. A., Ph. D.,

*Professor of History and Political Economy.*

JOHN PICKARD, A. M., Ph. D.,

*Professor of Classical Archæology, and Assistant Professor of Greek.*

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†Absent for session of 1896-7.

FRANK THILLY, B. A., Ph. D.,

*Professor of Philosophy.*

LUTHER MARION DEFOE, A. B.,

*Assistant Professor of Mathematics.*

HOWARD AYERS, B. S., Ph. D.,

*Professor of Biology.*

SIDNEY CALVERT, B. Sc., A. M.,

*Assistant Professor of Chemistry.*

ISIDOR LOEB, M. S., LL. B., Ph. D.,

*Acting Professor of History and Political Economy.*

BENJAMIN FRANKLIN HOFFMAN, M. L.,

*Professor of Germanic Languages.*

HENRY MARVIN BELDEN, B. A., Ph. D.,

*Assistant Professor of English Language and Literature.*

RAYMOND WEEKS, A. M.,

*Professor of Romance Languages.*

MATTHEW B. HAMMOND, Ph. B., M. L.,

*Acting Assistant Professor of Political Economy.*

WILLIAM GEORGE BROWN, B. S., Ph. D.,

*Professor of Chemistry.*

WILLIAM VAN ALLEN CATRON, A. M.,

*Acting Assistant Professor of Latin Language and Literature.*

SILAS DINSMOOR, A. B.,

*Instructor in Chemistry.*

ARTHUR HARRINGTON PLACE, C. E.,

*Instructor in Drawing.*

WILLIAM WALTER GRIFFITH, B. S.,

*Instructor in Physics.*

CURTIS FLETCHER MARBUT, B. S., A. M.,

*Instructor in Geology and Mineralogy.*

CHARLES HENRY THOMPSON, B. S.,

*Instructor in Botany.*

EDGAR E. BRANDON, A. B.,  
*Teaching Fellow in Romance Languages.*

FRANCIS POTTER DANIELLS, A. B.,  
*Teaching Fellow in Latin.*

INEZ RIGGS, M. L.,  
*Teaching Fellow in Germanic Languages.*

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## Theory and Practice of Teaching.

Professor BLANTON.

### Courses of Instruction :

There are two distinct courses, one Elementary and one Advanced.

#### I. ELEMENTARY COURSE.

The Elementary Course is intended to prepare teachers for the public schools of the State. Students who complete the work may receive a State Certificate which authorizes them to teach in the public schools of Missouri for a period of two years from the date of the certificate.

Candidates for this certificate must meet the following requirements :

1. They must, when they enter upon the course, be free from all entrance requirements.
2. They must take or must have taken at least twelve (12) hours Academic work from the Freshman class of one of the courses outlined on pages 54-55 of this catalogue.
3. They must, during the Freshman or a later year, take three (3) hours a week of Elementary Pedagogics below outlined, and two (2) hours a week of Drawing in the College of Agriculture and Mechanic Arts, throughout the year, in place of five (5) hours a week of the regular Academic work required in the year and the course in which they belong. The omitted Academic work must, however, be later completed by all candidates for Academic degrees.

The following are the required studies in the Elementary Course in Pedagogics :

- 1a. History of Educational Theories. Lectures. Parallel readings and Essays. *First Semester, T. Th. S., at 11:30.*
- 1b. (1) Elements of Pedagogy; (2) Organization and Management of Schools. Lectures. *Second Semester, T. Th. S., at 11:30.*

For the required course in Drawing see Index under "Drawing."

## II. ADVANCED COURSE.

The Advanced Course is intended to prepare students as teachers in the Secondary Schools of the State. This course leads to the Normal diploma, which entitles the holder to teach for life in any public school in Missouri. This diploma is given to graduates of the Academic department who have met the following conditions:

1. In the Junior year, the application of three (3) hours in each semester to the work in Pedagogics—the time to be taken out of the free electives. This work counts toward any Academic degree.

2. In the Senior year, the application of three (3) hours each semester to the work in Pedagogics. This work must be done in addition to the fifteen (15) hours required for Academic Work in that year.

3. The completion of two (2) Teachers' courses of not more than three (3) hours a week for one semester. These courses are offered as electives to Normal students by the various Academic Professors, but do not count towards any Academic degree. The object is to show the best method of instruction in any given subject, the work done by the class being used as a basis for illustration. Students who have met these conditions successfully may receive a Normal diploma and a life certificate to teach in Missouri at the same time that they receive an Academic degree.

The following courses are offered:

1. History of Education. Lectures. Essays, Reports and Discussions. *M. W. F.*, at 10:30. (Junior.)

The course should be preceded by course 1 (General History) page 64, and course 1b (Introduction to Social Science), page 65.

Special importance is attached to the study of the educational classics. Davidson's *The Education of the Greek People*, Davidson's *Aristotle and the Ancient Educational Ideals*, Plato's *Republic*, Clarke's *The Education of Children at Rome*, Quintillian's *Institutes of Oratory*, Montaigne's *Essays on Pedantry, Anger, and on the Education of Children*, Mulcaster's *Positions*, Ascham's *Schoolmaster*, Bacon's *Advancement of Learning*, Comenius' *School of Infancy*, Milton's *Tractate on Education*, Locke's *Thoughts on Education*, Pestalozzi's *Leonard and Gertrude*, Spencer's *Education*, and Thring's *Theory and Practice of Teaching*, are read, wholly or in part, and discussed with reference to the development of educational ideals, methods and institutions.

2. Institutes of Education. Lectures. Recitations, and occasional essays. *T. Th. S.*, at 3. (Senior.)

This course must be preceded or accompanied by courses 1 and 3, in Philosophy, page 65. Texts: Rein's *Outlines of Pedagogy*, McMurray's *General Method*, Lange's *Apperception*, and Rosenkranz's *Philosophy of Education*. Bi-weekly reports of observations of work in the Columbia Public Schools, and lesson plans on subjects assigned, will also be required.

3a. School Systems of Europe. Lectures. Readings and reports. *First semester, M. W. F., at an hour to be selected.* (Junior Elective.)

Texts: Reports of U. S. Commissioner of Education, Paulsen and Hart's Universities of Germany, Klemm's European Schools, and others.

Courses 1, 2, are required for the Normal diploma and Life certificate. Course 3a is elective.

#### **Degree of Bachelor of Pedagogics:**

The degree of Bachelor of Pedagogics (B. P.) will be conferred on any graduate of the Academic department of the University holding the Normal diploma and life certificate, upon application to the Board of Curators after two years of successful teaching, and upon the presentation to the Faculty of a thesis. This is to be known as the thesis for the Bachelorship in Pedagogy, and must be submitted by the candidate not later than May 1 preceding the Commencement at which the conferment of the degree is sought. The thesis must discuss a subject belonging to one of the courses of study in Pedagogy, and must show original treatment or give evidence of independent research. The number of words in the thesis must not be less than five nor more than ten thousand.

#### **Special Courses for Teachers:**

Special courses of instruction are annually offered by Professors in the University to teachers of the State free of all charges, beginning April 1, and continuing two months. Due announcement of the courses to be offered in 1898, beginning April 1, will be made during the second semester by circular to teachers.

Hereafter the University will maintain regularly a summer school, particularly for instruction in laboratory methods of teaching science. It is open to all teachers in the State, but is designed especially for those who teach or wish to teach in High Schools. These courses will begin May 31, and end August 21, 1897. Circulars giving full details may be had upon application by letter to the University. See Appendix I.

No fees are charged for any of these special courses for teachers.

### III. Department of Law.

#### FACULTY.

RICHARD HENRY JESSE, LL. D.,

*President.*

ALEXANDER MARTIN, LL. D.,

*Professor of Law, and Dean of the Faculty.*

JAMES AULL YANTIS, LL. B.,

*Professor of Law.*

JOHN DAVISON LAWSON, LL. D.,

*Professor of Law.*

ANDREW WALKER MCALESTER, M. D.,

*Lecturer on Medical Jurisprudence.*

Hon. GEORGE B. MACFARLANE, Judge of the Supreme Court of Missouri,

*Non-resident Lecturer on Criminal Procedure.*

Hon. ELMER B. ADAMS, Judge of the U. S. District Court for the Eastern District of Missouri,

*Non-resident Lecturer on the Law of Wills and Administration.*

Hon. JAMES A. SEDDON, LL. B., Ex-Judge of Circuit Court of St. Louis,

*Non-resident Lecturer on Commercial Law.*

Hon. FRANCIS M. BLACK, of Kansas City, Ex-Chief Justice of Missouri,

*Non-Resident Lecturer on Equity Jurisprudence.*

Hon. JAMES B. GANTT, Presiding Judge of Division No. 2 of the Supreme Court of Missouri,

*Non-Resident Lecturer on Corporations.*

#### Requirements for Admission :

*Junior Class.*—For admission to the Junior Class, no examination in law is imposed. Candidates are advised to complete, if they can, a full academic or collegiate course.

It is the purpose of the University to raise gradually the standard of Academic requirements necessary for admission to the Department of Law. Accordingly in the fall of 1897 the requirements for admittance will cover



the subjects embraced in the first year of a course of study embodying the recommendations of the University to its approved high schools (see pages 45-50); in the fall of 1898 the subjects embraced in two years of such a course; in the fall of 1899 the subjects embraced in three years of such a course.

In the fall of 1900 and thereafter the requirements for admittance to the Department of Law will be fully equivalent to those demanded for admittance to the Academic Department. (See pages 41-43.)

An applicant presenting to the "Committee on Entrance by Diploma" a certificate from the Principal of any Approved high school or academy showing that in any course of study in which said school has been approved by the University the applicant has finished with passing grades the first year, will be admitted without examination in the fall of 1897; upon presentation of such a certificate showing that he has finished two years of such a course he will be admitted without examination in the fall of 1898; in a similar way upon showing that he has finished three years of such a course he may be admitted without examination in the fall of 1899. In the fall of 1900 he must present a diploma from an Approved high school or academy or pass entrance examinations similar to those for admission to the Academic Department.

In lieu of such diploma or certificate the applicant will be required in the fall of 1897 to pass satisfactory examinations on all of the following subjects: History, English, Mathematics, and Latin.

1. In History, the applicant will be examined on the equivalent of the work given in Myer's General History, or in lieu thereof on the equivalent of the work given in Ransome's "A Short History of England."

2. In English, the examination will be on Grammar, Rhetoric, and Composition, of the grade of Longman's School Grammar.

3. In Mathematics, the examination will be on Algebra, and the applicant should have a knowledge of the subject equivalent to that found in "Wentworth's Shorter Course in Algebra" up to quadratic equations.

4. The examination in Latin must show a thorough mastery of Collar and Daniell's First Latin Book, or of Gildersleeve's Latin Primer, or of some other Beginner's Book fully equivalent to these.

No student will be admitted who has failed in the examination on any of these subjects.

In the fall of 1898, the examinations will cover the ground in various subjects, as here indicated:

1. In History. The equivalent of Myer's "General History."

2. In English. Grammar, Rhetoric, Composition, and Literature, in amount and of a grade equivalent to Longman's School Grammar, Keeler & Davis' Studies in English Composition, and two-thirds of the masterpieces in English literature named in the English Academic entrance requirements for 1898 (pages 41-42).

3. In Mathematics. Examination on either two years of Algebra or one year of Algebra and one year of Plane Geometry. One year's work in Algebra will be the equivalent of Hall & Knight's Elementary Algebra up to Quadratic Equations; two years' work, the same text through the Binomial Theorem. One years' work in Plane Geometry will be the completion of Wentworth's Plane Geometry, or its equivalent.

4. In Latin. Three books of Cæsar's Gallic War, and fifteen lessons in Arnold's Prose Composition. For the Cæsar, Nepos may be substituted.

5. In Science. One years' work with laboratory practice in any one of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.

6. In Greek. One year's work—the equivalent of White's Beginners' Greek Book, and some facility in reading Xenophon's Anabasis. For this year of Greek a year of History or of Science will be equally accepted. This second year of History will be in English and United States History, the equivalent respectively of Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution." The second year in Science will be in a second of the three sciences named above (Biology, Physics, Chemistry), with laboratory practice.

No student will be admitted who has failed in the examination on any of these subjects.

All examinations will be conducted in writing.

If unknown to the Faculty, the candidate must bring satisfactory testimonials of good character.

Candidates may be admitted to the Junior class at any time during the session, by fulfilling the requirements for entrance, and by passing an examination upon the work accomplished by the class at the date of the examination.

**Senior Class.**—No one will be admitted to the Senior class as a candidate for a degree unless he applies at the beginning of the year, is possessed of the academic education and moral character required for admission to the Junior class, and has passed a satisfactory examination upon the studies of the Junior year. Certificates of admission to the bar will not relieve the applicants from examination for admission to the Senior class. In exceptional cases, upon failure in one or two branches only, the examination, as to those branches, may be postponed to some period during the session, and the applicant will be admitted to the class as a candidate for a degree, upon condition that he pass at the time appointed a satisfactory examination on those branches. No one is permitted to pursue in one year the full course of two years. He must be qualified in the first year's course before admittance is granted to the second year's course.

**Graduate Class.**—No one will be admitted to this class as a candidate for the degree of LL. M., unless he holds the degree of LL. B. from the law department of the University, or is a graduate of some other law school whose course of instruction is equivalent to that offered in this University.

Admission to the Senior or Graduate class will not be permitted after two weeks from the beginning of the year.

*Special Course.*—The same qualifications as to education and character required of candidates for the Junior class, will be exacted of students admitted to special courses.

#### COURSES OF STUDY.

The principal object of the courses of study adopted in the school is to qualify its graduates for an efficient and successful discharge of their duties as licensed attorneys. It has never been within the aim of the school to cram its students for the purpose of qualifying them to pass the special examinations which may possibly take place at the bars to which they may seek admission. The courses of study have been adopted with the view of familiarizing the successful candidate for a degree with the principles of substantive law, and the law of remedial procedure, as prevailing in American jurisprudence. After a short study of the statutes and decisions of the State in which he expects to settle, he will deserve admission to the bar. As the degree of LL. B. from this Department entitles the graduate to admission to the bar of the State of Missouri, the Faculty cannot overlook the fact that a fair knowledge of the general statutes of the State, and of the modifications which the common law has undergone in the decisions of the courts, is an essential qualification for admission to its bar. But, as there is a great similarity in the general statute and judiciary law of the Western, Northwestern and Southwestern states, it is believed that what may be learned in that respect will be of benefit to a student settling in any of said states.

#### Undergraduate Course:

The undergraduate course covers a term of two years. There are two classes—Junior and Senior. Instruction is given daily to these classes, in the form of lectures, recitations and examinations upon the text-books recommended, and upon leading cases furnished by the Faculty. Every Tuesday they participate in the exercises of a Moot court.

##### I. The Junior class receives instruction on the following subjects:

1. Law of Torts, Elements of Law of Real Property; by Professor YANTIS.
2. Contracts, Agency, Personal Property (including Sales); by Professor LAWSON, and Special Lecturers.
3. Negotiable Instruments, Parliamentary Law; by the DEAN, and Special Lecturers.

##### II. The Senior class receives instruction on the following subjects:

1. Real Property, Evidence, Criminal Law; by Professor YANTIS, and Special Lecturers.

2. Equity Jurisprudence, Pleading and Practice at common law, in equity and under the code, Corporations, Constitutional Law; by the DEAN, and Special Lecturers.
3. Insurance, International Law; by Professor LAWSON.
4. Law of Wills and Administration; by Special Lecturers.

The text-books recommended are as follows:

*For the Junior Year—*

|  |                                    |
|--|------------------------------------|
| On Elements of Law of Real Property..... | Blackstone and Kent                |
| On Torts.....                            | Hale, Pollock, Cooley              |
| On Contracts.....                        | Lawson, Bishop                     |
| On Agency.....                           | Story, Meecham                     |
| On Sales.....                            | Tiedeman, Brown, Benjamin, Tiffany |
| On Bailments.....                        | Lawson                             |
| On Personal Property.....                | Smith, Lawson's Cases              |
| On Domestic Relations.....               | Brown, Schouler                    |
| On Negotiable Instruments.....           | Norton, Bigelow                    |
| On Parliamentary Law.....                | Roberts, Cushing                   |

*For the Senior Year—*

|                               |                               |
|-------------------------------|-------------------------------|
| On Real Property.....         | Tiedeman, Williams, Washburn  |
| On Wills.....                 | Chaplin                       |
| On Evidence.....              | Greenleaf, Best, Starkie      |
| On Criminal Law.....          | Bishop                        |
| On Insurance.....             | Richards, May                 |
| On International Law.....     | Lawrence, Glenn               |
| On Equity Jurisprudence.....  | Bispham, Merwin, Fetter       |
| On Pleading and Practice..... | McKelvey, Bliss, Heard, Desty |
| On Constitutional Law.....    | Black, Cooley                 |
| On Corporations.....          | Taylor, Thompson, Murfree     |
| On Partnership.....           | Pollock                       |

**Graduate Course :**

This course is open to graduates of the Law department and to those of other law schools that have completed an equivalent course of study.

The object of the Graduate course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures and recitations on the following subjects:

Constitutional Law, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence, Practice.

The student in this course is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students the instruction in this course.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Lewin on Trusts; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations; Holland's Jurisprudence; Pattison's Forms.

#### **Special Course :**

Students who do not wish to take any of the full courses, and who are not candidates for any degree, will be permitted to take an elective course, and pursue branches of instruction given in the Department, the exercises of which do not conflict with one another. They will be classed as special students, and will receive from the Faculty certificates of the time spent in the study of the law and of the work therein accomplished.

#### **METHODS OF INSTRUCTION.**

In the Department of Law instruction is given by means of Lectures, Recitations, Examinations, and the study of Treatises and Cases.

The first benefit inuring to the student who enters a good law school is to learn how to study law, as distinguished from merely reading it. A student in an attorney's office is too apt to continue, in his study of law, the superficial habit acquired by him in the perusal of newspapers, literary periodicals and novels.

On entering the school he is instructed in the proper method of reading treatises and reports of cases, of examining questions of law, of taking notes of lectures, and of handling digests, dictionaries and compilations of the law.

The Law Faculty is satisfied from experience that the highest results cannot be reached by lectures alone, however clear and thorough they may be; but that the students, as far as possible, should be required to study the text of some approved treatise on the subject of instruction, and to examine critically well-considered cases illustrating the principles discussed in the lecture-room. For the purpose of ascertaining the progress of the student, and impressing upon him the necessity and advantages of precise and definite knowledge of the subject upon which he has received instruction, he should be required to stand frequent examinations on the work accomplished by him. He should also be required to take notes of the substance of the lectures, and of the cases furnished by the Professor for his investigation. In this manner, it is believed, he will receive the full advantages of the lecture and recitation methods of instruction as



applied to the study of treatises, and to the examination and analysis of cases. In addition to lectures and recitations, the classes are divided into sections and subjected to quizzes conducted by members of the class, appointed by the Professors for that purpose. The members are also required to explain and develop in the lecture-room subjects assigned to them by the Professors. A combination of these different methods has, in the opinion of the Faculty, produced the most satisfactory results.

#### **Moot Court:**

Every Tuesday a Moot Court is held, in which all Law students participate. In this court the matters discussed arise in some supposed cause. Regular pleadings are required, and when the cause is supposed to be in the Supreme Court, in addition to the pleading, papers are prepared necessary in actual practice, as the writ of error, assignment of errors, bill of exceptions embodying the instructions to the jury, ruling upon the admission or exclusion of evidence, motions for new trial, in arrest, etc. Briefs of points and authorities must also be submitted and filed. A member of the Faculty presides at the trial, determining all preliminary and incidental motions. A member of the Senior class or Graduate class is called to sit as special judge in each cause, who, the next week, gives his opinion in writing, subject to appeal to the member of the Faculty present at the trial. Practical instruction in pleading is given by requiring half of the members of a class to draft pleadings in causes assigned to them, and to submit them to the other half. The pleadings thus drafted are discussed and settled in the presence of the Professor giving instruction on that subject.

#### **DEGREES AND HONORS.**

##### **Degrees :**

Members of the Senior class who have successfully passed the examinations of the Senior year will be entitled to receive the degree of Bachelor of Laws. Members of the graduate class who have successfully passed the prescribed examinations will be entitled to receive the degree of Master of Laws.

All who receive from this University the degree of Bachelor of Laws are by law admitted, without further examination, to practice in all the courts of the State of Missouri.

##### **Honors :**

Whenever a candidate for graduation attains a high degree of excellence in his class-work the degree of Bachelor of Laws or Master of Laws will be conferred upon him with distinction, and the words *cum laude* or *magna cum laude* will be incorporated in the diploma. In determining the required degree of excellence the student's conduct as a gentleman, as well as his attainments as a scholar, will be taken into consideration.



The members of the Senior class are all invited to write essays upon some subject in law, assigned to them by the Faculty before January 1 of each year. The essays so written are submitted to a committee of judges charged with the duty of designating the best two of said essays. The names of the authors are placed on the Commencement program. Students not writing essays as aforesaid, and not excused therefrom by the Law Faculty, shall not be eligible to any of the honors and distinctions heretofore mentioned as in addition to the right of graduation.

**Prizes:**

A prize of \$50, provided in the endowment fund of the Hon. James S. Rollins, is awarded each year at the Commencement to the member of the Junior Law class, who by superior scholarship and moral conduct, has shown himself entitled thereto.

The Edward Thompson Company, Law Publishers of Northport, New York, give annually to the author of the best thesis submitted by members of the Senior Law Class a prize consisting of a complete set of their famous American and English Encyclopædia of Law. This set consists of thirty-one volumes, and is valued at \$100.

**ADVANTAGES.**

The advantages now offered by the University of Missouri for instruction in the science and practice of common law and equity, as prevailing in the United States, have been greatly increased within the last few years.

**Accommodations:**

Since the destruction of the main building of the University by fire, January 9, 1892, the Curators have erected a large, commodious structure for the use of the Law department. It contains a spacious library-room, two large lecture-rooms, moot court and club-rooms, quiz-rooms, and offices for the Professors.

**Libraries:**

The library of the Law department consists at present of a large collection of reports, and treatises on every subject of the law. It is increasing every year, the Thirty-eighth General Assembly of the State having in 1895 appropriated five thousand dollars to that end, which has been expended in the purchase of treatises and reports. All the decisions of the American courts are received as soon as published. A complete set of digests of decisions and reports is kept up, so that the latest expressions of authority are brought within reach of the students and Professors. Members of the Law department have access also to the general library of the University.

**Academic Facilities:**

The connection of the Law department with the University enables the law student, without additional charge, to take instruction in other de-

partments of the University, provided it does not interfere with his legal studies. Some members of every class have found it convenient to pursue such studies as Latin, French, Logic, English, Military Science, Political Economy, History, Stenography, Elocution, etc.

**University Societies :**

Members of the Law department are eligible to membership in the two literary societies of long standing in the University known as the "Athenæan" and the "Union Literary." They are also eligible to membership in the "Bliss Lyceum," to which members of the Law department alone are admitted.

These societies are nurseries of oratory, debate and parliamentary law.

**GENERAL INFORMATION.**

The Department of Law is open alike to men and women.

For enrollment of students in the Department, see the Index.

The Law department opens with the other departments of the University, on the second Tuesday in September, and closes on the first Wednesday in June of each year.

Examinations for admission will be held on the second Tuesday in September, at 9 o'clock a. m.

Examinations for admission may be accorded at other times, upon request, to suit the convenience of applicants.

For information as to the tuition charges and expenses of the Law department, see page 22.

For further information and catalogues, address

ALEXANDER MARTIN, Dean,  
Columbia, Mo.

## IV. Department of Medicine.

### FACULTY.

RICHARD HENRY JESSE, LL. D.,  
*President.*

ANDREW WALKER MCALESTER, A. M., M. D.,  
*Dean of the Faculty, and Professor of Surgery and Obstetrics.*

WOODSON MOSS, M. D.,  
*Professor of Anatomy and the Practice of Medicine, and Secretary to the Faculty.*

JOHN WALDO CONNAWAY, M. D. C., M. D.,  
*Professor of Physiology (Human and Comparative).*

GEORGE WASHINGTON CUTLER, M. D.,  
*Professor of Physical Culture.*

MILLARD LEWIS LIPSCOMB, A. M.,  
*Professor of Physics.*

HOWARD AYERS, B. S., Ph. D.,  
*Professor of Biology.*

SIDNEY CALVERT, B. Sc., A. M.,  
*Assistant Professor of Chemistry.*

WILLIAM GEORGE BROWN, B. S., Ph. D.,  
*Professor of Chemistry.*

B. MEADE BOLTON, M. D.,  
*Professor of Bacteriology and Pathology.*

SILAS DINSMORE, A. B.,  
*Instructor in Chemistry.*

WILLIAM WALTER GRIFFITH, B. S.,  
*Instructor in Physics.*

G. R. HIGHSMITH, M. D.,  
*Lecturer on Abdominal Surgery.*

**Requirements for Admission:**

It is the purpose of the University to raise gradually the standard of educational requirements for admission to the Department of Medicine. For the session 1897-8, the requirements will be as follows:

(a) Creditable certificates of good moral standing. (b) Diplomas of graduation from a literary or scientific College or High School, or, in lieu thereof, an examination in the following branches: English Grammar and Composition, Arithmetic, Algebra as far as quadratics, United States History, Geography, Latin (equivalent to one year in a high school), and one year's work with laboratory practice in one of these sciences: Biology, Physics, Chemistry—Biology preferred.

For the session of 1898-99 the requirements will be two years of a high school course embodying the recommendations of the University to its Approved Schools; for 1899-1900 three years of such a course; and in the fall of 1900 and thereafter, the requirements for admission to the Department of Medicine will be fully equivalent to those demanded for admission to the Academic department. (See pages 41-43.)

It is important for such applicants as are able to do so to present to the President of the University a certificate from the Principal of an Approved High School or Academy showing that in a course of study in which said school has been approved by the University the applicant has finished with passing grades the first year, or the first and second years, or the first, second and third years. While such documents may not supersede the entrance examination, they are valuable aids to the examiners. Such documents should always be brought by those entitled to them, and presented promptly to the President of the University.

**COURSE OF INSTRUCTION.***First Year.*

| First semester:                  |   | Second semester:            |   |
|----------------------------------|---|-----------------------------|---|
| Chemistry .....                  | 4 | Chemistry.....              | 4 |
| Physics .....                    | 4 | Physics.....                | 4 |
| Anatomy (Osteology).....         | 3 | Anatomy and Dissection..... | 4 |
| Comparative Anatomy (Viscera). 3 |   | Physiology .....            | 6 |
| Normal Histology.....            | 4 |                             |   |

*Second Year.*

| First semester:   |   | Second semester:          |   |
|-------------------|---|---------------------------|---|
| Anatomy .....     | 2 | Anatomy.....              | 2 |
| Physiology.....   | 4 | Dissection.....           | 2 |
| Chemistry .....   | 4 | Chemistry.....            | 3 |
| Bacteriology..... | 6 | Practice of Medicine..... | 3 |
| Embryology.....   | 2 | Pathology.....            | 3 |
|                   |   | Materia Medica.....       | 2 |
|                   |   | Obstetrics.. ..           | 3 |

Third Year.

First semester:

Second semester:

|                           |   |                           |   |
|---------------------------|---|---------------------------|---|
| Practice of Medicine..... | 3 | Practice of Medicine..... | 3 |
| Surgery.....              | 3 | Surgery .....             | 3 |
| Obstetrics.....           | 2 | Gynecology.....           | 2 |
| Surgical Anatomy.....     | 2 | Therapeutics .....        | 2 |
| Therapeutics .....        | 2 | Electro-Therapeutics..... | 3 |
| Toxicology.....           | 2 | Clinical Pathology.....   | 2 |

The figures indicate the number of hours a week in the lecture-room. Two and a half hours in the laboratory are reckoned as only one hour in the lecture-room.

PLAN OF INSTRUCTION.

Instruction is given by lectures, recitations, clinical teaching, and laboratory work.

The length of the session, nine months, renders it practicable to distribute the different branches among the teachers in a satisfactory manner, and in their natural order and succession. The student is thoroughly drilled each day by examinations upon the lectures of the previous day, and by recitations from text-books.

By this method of teaching, it is believed that the process of cramming—a deleterious practice, too prevalent in the general system of medical education—is avoided; and much will be done to elevate the standard of medical education, and to exalt the dignity of the profession.

The students are taught the use of the microscope, in both pathological and physiological studies. The methods of bacteriological, physiological and histological investigation are taught by practical work in the laboratories.

Medical students in their first year may take, without additional fee, any work offered in the Academic Department and in the Schools of Agriculture and Mechanic Arts; and in their second and third years, any work offered in the University; but the number of hours shall not exceed 18 a week, and such work shall not count toward the degree of M. D. unless it is included in the regular Medical course. Academic students, on the other hand, may take Anatomy and Physiology in the first year of the Medical course, preparatory to entering on the full Medical course after graduating in Arts or Science. (See page 53.) Such students are admitted to the Second Year's Medical class.

LABORATORIES.

The following courses are required:

Chemistry:

1. Elementary Organic Chemistry. Lectures, *M. W.*, at 9:30; Laboratory, *T. W.*, at 1:30. (First Year.)
2. Qualitative and Urinary Analysis. Lectures, with laboratory exercises at option of instructor. *T. W. F. S.*, at 2. (Second Year.)

3. Sanitary and Physiological Chemistry. *Three hours a week.*

Topics (in Sanitary Chemistry).—*Air*: Respiration, vitiated air and ventilation; systems of heating and of ventilation; dust, infection, contagion, germ theory of disease; inoculation and immunity; disinfection; septic means and measures. *Water*: Potable water, hard and soft; impurities in it from service pipes or sewage contamination; public water supplies and systems of sewerage and canalization; mineral and other waters; drinking, bathing, climatic and water cures. *Soil*: Micro-organism in it; ground air, ground water and public health. *Food*: Milk, fresh and condensed; bovine tuberculosis and milk supply; milk substitutes and infants' and invalids' foods; emulsified, digested and peptonized food; bread, meat, fat, sugar; preservation and adulteration of foods; poisonous foods; dietaries, specific and general; digestion, natural and aids to it, condiments, tonics, stimulants; food and muscular energy.

Topics (in Physiological Chemistry).—*Physical Exercise*: Mental strain; grief, pleasure, worry, diversion; slums and dirt in their relation to health and morals; environment and social influences reacting upon life of individual and nation; private and public sanitary measures; health boards, communal, State and National, and the scope of their work.

4. Toxicology. *Two hours a week.*

(Third Year.)

**Physics:**

2. Elementary Physics. Lectures and recitations, *M. F.*, at 11:30. Laboratory, *T. Th.*, at 1:30. (First Year.)

- 6a. The Practical Application of Electricity in Medicine and Surgery. *First semester, T. Th. S.*, at 9:30. (Third Year.)

Text: Liebig and Rohe.

**Biology:**

- 1a. Comparative Anatomy of Vertebrates (Macroscopic and Microscopic). Lectures and Laboratory. *First semester, seven hours a week.*

Wiedersheim's Comparative Anatomy of Vertebrates, Gray's Anatomy, Gorham & Tower's Anatomy of the Cat, Schaefer's Histology.

2. \*Comparative Embryology of Vertebrates. Lectures, *one hour a week*; Laboratory, *three hours a week.*

Minot's Human Embryology, Marshall's Vertebrate Embryology.

3. \*Comparative Neurology of Vertebrates. Lectures and Laboratory.

(Elective.)

Courses 1 and 2 are required for admission to this course. Texts: Edinger's Anatomy of the Central Nervous system, and Obersteiner's Central Nervous System.

**Physiology:**

- 1b. Lectures and Laboratory. *Second semester, six times a week.*

(First Year.)

The topics considered are: The blood, circulation, muscle, nerve, digestion, respiration, excretion, etc. The course must be

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\*Will not be given in 1897-98.



preceded by one semester's work each in Comparative Anatomy, Histology, Physics and Chemistry. Text: Foster's Physiology; Collateral reading—Landois, Waller. Laboratory Manual—Stirling's Practical Physiology.

This course is elective for Academic students.

2a. Lectures and Laboratory (a continuation of course 1b). *First Semester, four times a week.* (Second Year.)

Topics—Metabolism, nutrition, nervous system, and reproduction. Course 1b must precede. Text: Foster's Physiology; Collateral reading—advanced texts and journals.

**Laboratory and Equipment.**—The laboratory occupies rooms 2 and 3 in the north wing of the Museum Building, is well lighted, and is furnished with new laboratory tables suited to the work.

The laboratory is supplied with glassware, chemicals, microscope, a microtome, and a fair equipment of apparatus for graphic and other work, as induction coils, batteries and keys, rheocord, moist chamber, kymograph, student's drums, pendulum myograph, manometers, Marey's tambours, sphygmograph, cardiograph, stethograph, electric time-markers, contact clock, metronomes, tuning fork and electro magnet, rheonom haemacytometer, haemometer, micrometers, artificial eye phakoscope, perimeter, stromuhr, oncometer, electrometer, saccharimeter, ureometer, etc.

#### **Bacteriology :**

This course consists of lectures and recitations, and about eight weeks of daily practice in the cultivation of bacteria upon artificial media, and the bacteriological examination of water, air, soil, dairy products, and of any pathological material that can be obtained. Text-book: Abbott's Principles of Bacteriology.

#### **Pathology :**

This course consists of lectures and recitations, and demonstrations of mounted preparations. Opportunity is also afforded the student to harden, embed, cut, stain, and mount preparations. Text: Ziegler's General and Special Pathological Anatomy. The course is elective for Academic students.

#### **Anatomy :**

Facilities are afforded the students for the thorough study of Anatomy. Provision is made for a supply of subjects amply sufficient for the number of students. The dissecting rooms are large and well ventilated, and are open during the whole winter season, where, under the guidance of a demonstrator, the student, by dissecting, acquires a practical knowledge of the human body in all parts.

The Physiological, Bacteriological and Pathological laboratories are located in the Biological building. The Professors of Surgery, Obstetrics,

and Practice of Medicine, have rooms on the first floor of the Academic Hall. The old medical building is now the Anatomical Hall.

#### **Clinics :**

The number and variety of Medical and Surgical Clinics are ample for purposes of instruction.

#### **DEGREES AND CERTIFICATES.**

Upon a satisfactory completion of the above course, the degree of Doctor of Medicine will be conferred. The degree of "*M. D. cum laude*" is given to all graduates in the Medical course who have the degree of A. B., B. S., or B. L.

At the close of each year, the following certificate is issued to students completing the work of that year:

"The Medical department of the University of the State of Missouri hereby grants this certificate to——— as an evidence that he has attended the———year's course, and passed the final examinations."

Upon the certificates the subjects and grades are recorded. No certificate of any character will be issued during the progress of the session.

#### **REQUIREMENTS FOR GRADUATION.**

1. The candidate must have completed the course prescribed and passed a satisfactory examination thereon.

2. He must be twenty-one years of age, and must exhibit evidence satisfactory to the Faculty of possessing a good moral character.

3. His last course of lectures must have been attended in this Department.

4. He must have been regular in attendance upon lectures and recitations and in laboratories.

5. Every candidate must appear before the members of the Faculty for examination in the various branches in medicine, at the time appointed for such examinations.

6. Conformity to the general laws established by the Curators and the Faculty for the government of the University, faithful discharge of duties and regular attendance upon lectures and laboratories, are required of all students.

For tuition charges, fees, etc., see "Expenses," page 22.

For further information, address

A. W. MCALESTER, M. D.,

Dean of Medical Faculty.

For catalogues, address

WOODSON MOSS, M. D.,

Secretary Medical Faculty, Columbia, Mo.

## V. Department of Military Science and Tactics.

WALTER ALONZO THURSTON, Lieut. 16th U. S. Infantry,  
*Professor of Military Science and Tactics, and Commandant of Cadets.*

### Requirements for Admission :

No cadet will be received who is under 16 or over 25 years of age, or who is less than five feet one inch in height, or who is in any way physically disqualified for military service.

All male students of the University not physically disqualified, who come within the limits of age and height, will be allowed to enroll themselves as voluntary cadets, but only State cadets will be matriculated in the Academic department of the University without payment of the tuition fees, and provided with the tailor-made uniform without expense to themselves. A copy of the regulations for the government of cadets will be given to each cadet upon his entrance into the Missouri State Military School. These regulations require cadets to enter and report to the Commandant for duty *before* September 25th of each year. They should report by September 12th, if possible.

### Cadet Officers :

#### *Battalion Staff and Non-commissioned Staff.*

|   |                |
|---|----------------|
| Cadet Major.....                              | C. M. Barnes   |
| Cadet First Lieutenant and Adjutant.....      | G. H. English  |
| Cadet First Lieutenant and Quartermaster..... | B. Munday      |
| Cadet Sergeant Major.....                     | R. H. Switzler |
| Cadet Quartermaster Sergeant.....             | L. L. Perrine  |

#### *Company A.*

|                              |               |
|------------------------------|---------------|
| Cadet Captain.....           | H. H. Lotter  |
| Cadet First Lieutenant.....  | L. Hegnauer   |
| Cadet Second Lieutenant..... | O. H. Turner  |
| Cadet First Sergeant.....    | R. S. Edmunds |

#### *Company B.*

|                              |               |
|------------------------------|---------------|
| Cadet Captain.....           | A. Gwinn      |
| Cadet First Lieutenant.....  | C. M. Jackson |
| Cadet Second Lieutenant..... | W. H. Turner  |
| Cadet First Sergeant.....    | G. E. Huggins |

*Company C.*

|                              |               |
|------------------------------|---------------|
| Cadet Captain.....           | J. D. McNeely |
| Cadet First Lieutenant.....  | A. M. Hitch   |
| Cadet Second Lieutenant..... | H. K. Hansen  |
| Cadet First Sergeant.....    | B. U. Pippin  |

*Band.*

|                     |                       |
|---------------------|-----------------------|
| Band Leader.....    | F. Pannell (civilian) |
| Drum Major.....     | J. C. Fast            |
| Chief Musician..... | J. W. Welch           |

Those cadets are appointed to office who show ready obedience, zeal and capacity in the discharge of military duty. The Governor of Missouri issues commissions to those entitled by their battalion rank to receive them.

**General Supplies :**

One hundred and fifty Springfield cadet rifles of the latest model, one Gatling gun, cal. 45, with full equipment, two 3-inch rifled field-guns, with carriages and implements, and a suitable amount of ammunition and target materials, are furnished by the United States. The State supplies ammunition, camp equipage, utensils, etc. The University supplies instruments and instruction for the band.

**Uniforms:**

Cadets wear but one style of uniform, known as the undress or fatigue uniform. Uniforms must be worn at all military exercises, and may, with permission of commandant, be worn on special occasions. Tailor-made uniforms are supplied to volunteer cadets at a contract price. The State furnishes uniforms to regularly appointed cadets free of cost (usually one entire uniform and one extra pair of trousers every year to each appointed cadet, depending upon amount of appropriation by Legislature).

*COURSE OF INSTRUCTION.**FIRST YEAR.*

Practical instruction in the schools of the Soldier, Company and Battalion (infantry), and Extended order.

Practical instruction in rifle-firing, 100, 200, and 300 yards.

Practical instruction in duties of camp, embracing guard duty, etc.

Recitations in Infantry Drill Regulations through School of the Company, ceremonies of guard mounting, dress parade, inspection, review, muster and extended order.

Recitations in guard duty, rifle-firing and cadet regulations.

SECOND YEAR.

Practical instruction in the Schools of the Company and Battalion, and in Extended Order.

Practical instruction in the service of field-guns (foot battery), with mechanical maneuvers.

Practical instruction in rifle-firing, 100, 200 and 300 yards.

Practical instruction in the duties of camp, embracing guard duty, etc.

Practical instruction in military signaling.

Recitations in Infantry Drill Regulations, School of the Battalion.

Recitations in Artillery Tactics, manual of the piece dismounted.

Recitations in the elements of Field Fortifications.

Lectures are given on Army Organization, the Army of the U. S., the regulations of the U. S. army, courts-martial and military law, and the customs of war, street fighting, etc. The commandant of cadets has power to change and arrange the course of study.

**Certificate of Proficiency :**

To have passed through the entire course does not entitle a cadet to receive a certificate of proficiency in Military Science and Tactics, but it is the rule now adopted in the University that the certificate will be issued to every cadet, State or volunteer, who takes the entire course and attains a grade of at least 70 per cent in *every examination* given during the two years in Military Science and Tactics.

**Appointment of State Cadets :**

The following extracts from the Militia law of the State of Missouri, enacted by the Thirty-eighth General Assembly, revised by the Thirty-ninth General Assembly, and now in force, will be of interest to those who desire to receive the appointment of cadet :

*Be it enacted by the General Assembly of the State of Missouri, as follows :*

SECTION 1. The military department of the University of the State of Missouri as organized under section 1225, Revised Statutes of the United States, and section 8741, Revised Statutes of Missouri, 1889, is created the Missouri State Military School.

SECTION 2. The corps of cadets of the Missouri State Military School shall consist of appointees of Senators and Representatives, and such students as may voluntarily enter such school. All appointments under this section shall be for the term of two years. Each Senator and Representative of the General Assembly of Missouri shall have power to appoint a cadet from his district by the first day of August of each year: Provided, that if there shall be no application for such cadetship in any such district by the first day of August, in any such year, then such appointment may be made from any other district in this State; and provided, that in case of death, resignation or expulsion from the University of any cadet from such

district, the Senator or Representative thereof may fill such vacancy at any time. All appointees under this section shall pass the required examination for admission to the University.

SECTION 3. Cadets receiving instructions, as provided in preceding section, shall be matriculated in all Academic departments, and in the College of Agriculture and Mechanic Arts of the University, free from tuition and other fees.

SECTION 4. The corps of cadets, as provided in the preceding sections, shall have the military organization prescribed for the National Guard of the State and reckoned a part thereof, and as such entitled to all such provisions as are or may hereafter be made for the National Guard of Missouri.

SECTION 5. The military government and discipline of the cadets shall be prescribed by regulations prepared by the Faculty of the University and approved by the Governor of the State. The officers of the corps of cadets shall be appointed and commissioned by the Governor of the State, upon the recommendations of the Faculty of the University, and shall have the powers conferred by said regulations.

SECTION 6. Cadets shall be individually responsible for all State property issued directly to them, and shall constitute a guard for the safe-keeping and preservation of all University property.

Approved April 11, 1895.

#### **Regulations:**

Cadet regulations prescribe that military drills, etc., shall be held at least three hours a week, one of which shall be for theoretical and two for practical instruction. The regulations also require, whenever the means of the University permit it, an annual encampment of from eight to ten days, during which the instruction is entirely military and practical. Here the cadets are put through all the duties of camp life. They conduct their own commissary and quartermaster departments. They have target practice at 100, 200, 300 and 400 yards, and perform the duties of sentinels, patrols, etc., and are given all the drills and ceremonies prescribed in the two years' course. The expenses of the encampment are borne by the University.

#### **Enrollment:**

During the present session 136 cadets have received instruction in Military Science and Tactics.

#### **State Commissions:**

Senate Bill No. 66, 39th General Assembly, provides as follows:

Article III. Section 33. Every graduate of any college in the State of Missouri, in which military instruction is regularly given by an officer of the United State army, detailed for that purpose, who shall have received military instruction during a course of four years, shall be entitled to a



commission as brevet second lieutenant of the National Guard of Missouri, subject to such physical examination as to ability as the commander-in-chief may from time to time prescribe: Provided, that application for such commission be made within one year after graduation from such college, and that such applicant shall be at the time a citizen of the State of Missouri.

## VI. College of Agriculture and Mechanic Arts.

### FACULTY.

Except those of the President and the Deans, names are printed in order of appointment. Names marked with a (\*) are names of members of the Faculty of the School of Mines and Metallurgy, at Rolla.

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RICHARD HENRY JESSE, LL. D.,

*President.*

HENRY JACKSON WATERS, B. A. S.,

*Dean of the Faculty, and Director of the Experiment Station.*

\*WALTER B. RICHARDS, M. A.,

*Director of School of Mines and Metallurgy, and Professor of Mathematics.*

PAUL SCHWEITZER, Ph. D.,

*Professor of Agricultural Chemistry, and Chemist to the Experiment Station.*

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

*Professor of Mathematics.*

EDWARD ARCHIBALD ALLEN, Litt. D.,

*Professor of English Language and Literature.*

HENRY CAPLES PENN, A. M.,

*Assistant Professor of English Language and Literature.*

GARLAND CARR BROADHEAD, M. S.,

*Emeritus Professor of Geology, and Curator of Geological Museum.*

MILLARD LEWIS LIPSCOMB, A. M.,

*Professor of Physics.*

MILTON UPDEGRAFF, M. S., B. C. E.,

*Professor of Astronomy, Director of the Observatory, and Assistant Professor of Mathematics.*

CHRISTIAN WILLIAM MARX, B. E.,

*Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.*

JOHN WALDO CONNAWAY, M. D. C., M. D.,  
*Professor of Veterinary Surgery.*

\*ELMO GOLIGHTLY HARRIS, C. E.,  
*Professor of Civil Engineering.*

†FREDERICK CHARLES HICKS, B. A., Ph. D.,  
*Professor of Political Economy.*

HARRY THOMAS CORY, M. M. E., M. C. E.,  
*Professor of Civil Engineering.*

LUTHER MARION DEFOE, A. B.,  
*Assistant Professor of Mathematics.*

HOWARD AYERS, B. S., Ph. D.,  
*Professor of Biology.*

JOHN CHARLES WHITTEN, B. S.,  
*Professor of Horticulture.*

\*COURTNEY DEKALB,  
*Professor of Mining and Metallurgy.*

\*ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,  
*Professor of Physics.*

SIDNEY CALVERT, B. Sc., A. M.,  
*Assistant Professor of Chemistry.*

WALTER ALONZO THURSTON (First Lieutenant, U. S. Army),  
*Professor of Military Science and Tactics.*

BENJAMIN FRANKLIN HOFFMAN, M. L.,  
*Professor of Germanic Languages.*

FREDERICK BLAKMAR MUMFORD, M. S.,  
*Professor of Agriculture, and Curator of the Agricultural Museum.*

HENRY MARVIN BELDEN, B. A., Ph. D.,  
*Assistant Professor of English Language and Literature.*

JOHN MOORE STEDMAN, B. Sc.,  
*Professor of Entomology, and Entomologist to the Experiment Station*

\*EUGENE THOMAS ALLEN, A. B., Ph. D.,  
*Professor of Chemistry and Metallurgy*

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†Absent for session of 1896-7.

RAYMOND WEEKS, A. M.,

*Professor of Romance Languages.*

MATTHEW B. HAMMOND, Ph. B., M. L.,

*Acting Assistant Professor of Political Economy.*

HOWARD BURTON SHAW, B. C. E., A. M.,

*Assistant Professor of Electrical Engineering.*

B. MEADE BOLTON, M. D.,

*Professor of Bacteriology and Pathology.*

††T. E. WHITE, D. V. S.,

*State Veterinarian, and Lecturer on Veterinary Surgery.*

\*PAUL JULIUS WILKINS, B. S.,

*Instructor in Academic Department.*

SILAS DINSMOOR, A. B.,

*Instructor in Chemistry.*

\*THOMAS LEWIS RUBEY, A. M.,

*Instructor in Academic Department, and Librarian.*

ARTHUR HARRINGTON PLACE, C. E.,

*Instructor in Drawing.*

WILLIAM WALTER GRIFFITH, B. S.,

*Instructor in Physics.*

CURTIS FLETCHER MARBUT, B. S., A. M.,

*Instructor in Geology.*

MARY ESTELLE PORTER, B. L.,

*Instructor in Commercial Studies.*

\*GEORGE EDWARD MILLER, B. S.,

*Instructor in Shop-work and Drawing.*

ELLIOTT JEFFRIES MASON, B. S.,

*Instructor in Mechanic Arts.*

CHARLES HENRY THOMPSON, B. S.,

*Instructor in Botany.*

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††In the service of the State Board of Agriculture.

EDGAR E. BRANDON, A. B.,

*Teaching Fellow in Romance Languages.*

INEZ RIGGS, M. L.,

*Teaching Fellow in Germanic Languages.*

EDWARD BEAUFORD CAUTHORN, B. S.,

*Teaching Fellow in Mathematics.*

#### **Historical Statement:**

This College had its origin in the beneficence of National, State and local governments. Its location, objects and aims are defined in the following extracts from the acts of Congress and the laws of the State of Missouri:

Its leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life. (Act of Congress, 1862, Sec. 4.)

There is hereby established the Agricultural and Mechanical College, and a School of Mines and Metallurgy, provided for by the grant of the Congress of the United States, as a distinct Department of the University of the State of Missouri. (R. S. of Missouri, Sec. 8738.)

To effect the said leading objects of the College, as herein established, it is provided that the students and members thereof shall be admitted to the libraries, museums, models, cabinets and apparatus, and to all lectures and instructions of the University which now exist or may hereafter exist, and to all other rights and privileges thereof, in a manner as full and ample as are the students of any other Department in said University; and to provide for instruction in military tactics, as herein required, it is enacted that in case a system of military education shall be established by Congress, the State University is hereby required by law to make the necessary provision for carrying out the plan so established in connection with the institution. (R. S., Sec. 8741, p. 2017.)

The Agricultural and Mechanical College, and the School of Mines and Metallurgy herein provided for, shall have each a separate and distinct Faculty, whose officers and professors may be the same in whole or in part as the officers and professors in other Colleges and Departments of the University. (R. S. of Missouri, Sec. 8742.)

In consideration of the permanent location of the Agricultural and Mechanical College in connection with the State University the county of Boone shall donate not less than \$30,000 in cash, to be used in erecting such buildings and making such improvements as may be needed for such College, and also for a Mechanical College in connection with the State Uni-

versity, and that the same shall be held for the uses and purposes of said Agricultural and Mechanical College. (R. S. of Missouri, Sec. 8744.)

In accordance with the above provisions, the citizens of Boone county made a donation of \$90,000 for the erection of a building and the purchase of lands for an experiment farm, and this College was permanently located at Columbia as a Department of the University, and the School of Mines and Metallurgy was located at Rolla, in Phelps county. The latter is under the same general control as the College of Agriculture and Mechanic Arts.

#### **Endowment of the College:**

The support of the College is derived from—

1. The proceeds of the sales of the public lands donated to Missouri by the act of Congress of July 2, 1862. This State received as her share two hundred and seventy-five thousand acres, of which there have been sold up to date two hundred and sixteen thousand seven hundred and sixty acres, yielding three hundred and twenty-two thousand dollars. This sum is invested in State certificates of indebtedness, at five per cent, and yields sixteen thousand two hundred dollars. Of this amount one-fourth, or four thousand and fifty dollars, is by law appropriated to the support of the School of Mines and Metallurgy, at Rolla.
2. The act of Congress of March 2, 1887, known as the "Hatch bill," which appropriates \$15,000 annually to the College of Agriculture for the maintenance of an Experiment Station. The object of this Station is to conduct experiments in various lines of work connected with agriculture. By the acts of Congress making the above appropriations, the expenditures are expressly restricted for the purposes of instruction, illustration and original scientific investigations in agriculture, and no part can be used for the erection or repair of buildings; such facilities are to be provided by the State of Missouri. The annual appropriations are yearly to be increased under act of Congress of August 30, 1890. The first appropriation of \$15,000, for the years 1889-90, is increased each year \$1000, and this is to continue until it reaches \$25,000, which shall remain an annual appropriation. Of this amount, one-sixteenth is by law appropriated to the "Lincoln Institute," at Jefferson City, for the education of negro children in agriculture and mechanic arts, and one-fourth of the remainder to the School of Mines and Metallurgy, at Rolla. The College Farm itself cost originally \$60,000.

The above sums, together with the assistance derived from the association of the College of Agriculture with the University, furnish an abundant income for all purposes of instruction and scientific investigation.



The College is divided into four schools, with a fifth department, the Experiment Station, as follows:

*A.*—The School of Agriculture.

*B.*—The School of Mechanic Arts.

*C.*—The School of Engineering.

*D.*—The School of Mines and Metallurgy (at Rolla).

*E.*—The Experiment Station.

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**A. SCHOOL OF AGRICULTURE.**

**FACULTY.**

RICHARD HENRY JESSE, LL. D.,

*President*

HENRY JACKSON WATERS, B. A. S.,

*Dean of the Faculty, and Director of the Experiment Station.*

PAUL SCHWEITZER, Ph. D.,

*Professor of Agricultural Chemistry.*

CHRISTIAN WILLIAM MARX, B. E.,

*Superintendent of Mechanic Arts.*

JOHN CHARLES WHITTEN, B. S.,

*Professor of Horticulture.*

JOHN WALDO CONNAWAY, M. D. C., M. D.,

*Professor of Veterinary Science.*

FREDERICK BLAKMAR MUMFORD, M. S.,

*Professor of Agriculture, and Curator of the Agricultural Museum.*

JOHN MOORE STEDMAN, B. Sc.,

*Professor of Entomology, and Entomologist to the Experiment Station.*

\*T. E. WHITE, D. V. S.,

*State Veterinarian, and Lecturer on Veterinary Surgery.*

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

*Professor of Mathematics*

EDWARD ARCHIBALD ALLEN, Litt. D.,

*Professor of English Language and Literature.*

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\*In the service of the State Board of Agriculture.

HENRY CAPLES PENN, A. M.,

*Assistant Professor of English Language and Literature.*

GARLAND CARR BROADHEAD, M. S.,

*Emeritus Professor of Geology.*

MILLARD LEWIS LIPSCOMB, A. M.,

*Professor of Physics.*

†FREDERICK CHARLES HICKS, B. A., Ph. D.,

*Professor of Political Economy.*

HOWARD AYERS, B. S., Ph. D.,

*Professor of Biology, and Curator of the Biological Museum.*

SIDNEY CALVERT, B. Sc., A. M.,

*Assistant Professor of Chemistry.*

ISIDOR LOEB, M. S., LL. B., Ph. D.,

*Acting Professor of Political Economy.*

HENRY MARVIN BELDEN, B. A., Ph. D.,

*Assistant Professor of English Language and Literature.*

WALTER ALONZO THURSTON, (Lieutenant, U. S. Army),

*Professor of Military Science and Tactics.*

MATTHEW B. HAMMOND, Ph. B., M. L.,

*Acting Assistant Professor of Political Economy.*

WILLIAM GEORGE BROWN, B. S., Ph. D.,

*Professor of Chemistry.*

B. MEADE BOLTON, M. D.,

*Professor of Bacteriology and Pathology.*

SILAS DINSMORE, A. B.,

*Instructor in Chemistry.*

ARTHUR HARRINGTON PLACE, C. E.,

*Instructor in Drawing.*

WILLIAM WALTER GRIFFITH, B. S.,

*Instructor in Physics.*

CURTIS FLETCHER MARBUT, B. S., A. M.,

*Instructor in Geology.*

MARY ESTELLE PORTER, B. L.,

*Instructor in Commercial Studies.*

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†Absent for the session of 1896-7.

ELLIOTT JEFFRIES MASON, B. S.,

*Instructor in Mechanic Arts.*

CHARLES HENRY THOMPSON, B. S.,

*Instructor in Botany.*

EDWARD BEAUFORD CAUTHORN, B. S.,

*Teaching Fellow in Mathematics.*

#### **Requirements for Admission :**

Applicants for admission to the Freshman class must be not less than sixteen years of age, and must have completed the "public school" course of the State. They must submit to the "Committee on Entrance by Diploma" satisfactory evidence of having completed the public school course; or in lieu of such evidence must pass satisfactory examinations in writing on each of the following subjects: English, Arithmetic, Geography (Descriptive and Political), and History of the United States. The examination will cover the ground embraced in the text-books adopted by the State for the common schools—namely, Ray's Practical Arithmetic, the Hyde series of language lessons, Butler's Geography, and Barnes' History of the United States. As a part of the English examination, the applicant will be expected to write a composition of not less than two hundred words.

Applicants for admission to advanced classes must furthermore pass examinations in all the studies previously pursued by the class which they propose to enter. If they have pursued such studies in any of the High Schools of the State approved by the Faculty, or in any other institutions of similar rank, they may receive credit therefor upon presenting to the "Committee on Entrance by Diploma" a certificate from the proper officers of such institutions.

For the dates of examinations for admission, see the calendar, p. lli, and page 44. For board and other expenses, see page 22.

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### **COURSES OF INSTRUCTION.**

#### **I. A TWELVE WEEKS' WINTER COURSE IN AGRICULTURE AND DAIRYING.**

This course is designed to meet the wants of a large number of young men who cannot afford the time or the money necessary for a regular college course in agriculture, and yet desire a better preparation for their life work than can be acquired on the farm.

To suit the convenience of farmers the course is given in the winter. It is open to all over 16 years of age, and no entrance examination or special

preparation is required. Any intelligent person with a common school education will be able to pursue the course with profit. An entrance fee of \$5 covers all college expenses.

It is the aim to give the student the largest amount of thoroughly practical information about farming, dairying, gardening, fruit-growing, veterinary science, carpentry and blacksmithing, possible in the twelve weeks allotted to the course, and, at the same time, to instruct him in the elements of chemistry, geology, entomology and botany as applied to agriculture and horticulture. The instruction is imparted by means of lectures, and practical illustrations on the farm, in the barn, in the greenhouse, the laboratories, and machine shops of the College.

The course consists of 229 lectures and exercises, divided as follows:

Agriculture, 75; Horticulture, 40; Dairying, 20; Agricultural Chemistry, 30; Economic Entomology, 10; Veterinary Science, 24; Carpentry and Blacksmithing, ten exercises of two and one-half hours each; Book-keeping and Farm Accounts, six exercises of two and one-half hours each; Butter and Cheese Making, 14 exercises of two and one-half hours each.

In addition to the course outlined, a number of special lectures are given by practical men who have been especially successful in particular branches of farming, fruit or vegetable growing, dairying, stock feeding, or stock breeding. During the winter of 1897 the following gentlemen delivered lectures in this course: Hon. J. R. Rippey, Secretary State Board of Agriculture, Columbia, two lectures on "The Missouri Road Horse;" John Patterson, President State Dairymen's Association, Kirksville, Mo., four lectures on "Missouri as a Dairy State."

## II. SHORT WINTER COURSE IN HORTICULTURE.

With a view to aiding in the development of the Horticultural interests of the State by the dissemination of correct information concerning the best modern methods in the management of nurseries and orchards and in the growing of small fruits, flowers, and vegetables on a commercial scale, and by instruction in the application of the sciences underlying these arts, a short winter course in Horticulture running parallel with the short course in Agriculture, is offered. This course is open to all persons over sixteen years of age, and no entrance examination is required. An entrance fee of \$5 covers all college charges.

The course consists of 267 lectures and exercises, as follows: Horticulture, 108 (including Nursery Work, 24 lectures and 12 afternoons at practice in the nursery and grafting shops; Orchardling and Small Fruit Growing, 24 lectures, and 12 afternoons in the orchards and vineyards; Market Gardening, 24 lectures and 12 afternoons spent in propagating vegetables, etc.); Landscape Gardening, 10 lectures; Fungous diseases and Fungicides, 20 lectures; Entomology, 60 lectures; Botany, 16 lectures; Manures, 10 lectures; Drainage, 5 lectures; Sanitary Science, 10 lectures; Book-keeping, 6 exer-

cises of two and one-half hours each; Carpentry and Blacksmithing, 18 exercises of two and one-half hours each; Steam Heating and Steam Fitting, 4 lectures.

The special lecturers in this course were Hon. N. F. Murray, Vice-President State Horticultural Society, Oregon, Mo., 24 lectures and 12 practical exercises on Nursery Work; Hon. L. A. Goodman, Secretary State Horticultural Society, Westport, Missouri, 24 lectures and 12 practical exercises on Orcharding and Small Fruit Growing; Frank Ambs, St. Louis, 24 lectures and 12 practical exercises on Market Gardening and Hot-bed Methods.

These short winter courses will begin Tuesday, January 3rd, 1898, and will be continued daily, except Sunday, until March 27, 1898. Full details will be given in a special circular which will be ready for distribution in October, 1897, and will be sent free to all applicants.

### III. A TWO YEARS' COURSE.

The course embraces the first two years of the regular Four Years' Course, and aims to give the student the most comprehensive knowledge of the laws underlying the best modern practice in Agriculture, Horticulture, etc., as well as to develop the highest skill in Mechanical Drawing, Carpentry, and Blacksmithing, that is possible in the time.

In addition to the mental discipline afforded by a study of these useful arts and sciences, the student is instructed in English, Mathematics, etc., with the view of broadening his mind and better fitting him for his duties as a citizen.

It is the purpose of the course to educate the student back to the farm instead of away from it, and to give him such knowledge as will be most useful in the practice of his profession.

The requirements for admission are the same as for the Four Years' Course.

Students completing this course will be granted a certificate.

### IV. A FOUR YEARS' COURSE.

This course, a continuation of the Two Years' Course, is more scientific, but no less practical.

It has been recast in order to adapt it as far as possible to present requirements in both science and practice. Its object is to give young men a thorough education at the same time that they are carefully instructed in the relations that the sciences bear to the various branches of agriculture; to give the mental training that is indispensable to success and to the discharge of the highest duties of citizenship, as well as the scientific and technical training and knowledge requisite for becoming efficient workers in agricultural affairs, whether as practical farmers, teachers, or investigators. It aims to impart a thorough and comprehensive knowledge of the

principles underlying the business of farming according to modern methods. Practice is combined with theory, whenever it is necessary for the demonstration of a principle or involves skilled labor, but the student's time is not consumed in merely manual operations. Increased teaching force and equipment have been provided for the work, and the opportunities offered young men were never so satisfactory as at the present time.

Students completing this course will be entitled to a diploma, conferring upon them the degree of Bachelor of Agriculture (B. Agr).

## SCHEME OF STUDIES.

### TWO-YEAR AND FOUR-YEAR COURSES.

#### *First Year.*

| First semester. |  | Second semester. |  |   |
|-----------------|--|------------------|--|---|
| 8:30.           | Algebra and Geometry, T. W.<br>Th. F. S..... | 5                | 8:30. Algebra and Geometry, T. W.<br>Th. F. S..... | 5 |
| 8:30.           | *Commercial Course, M.....                   | 1                | 8:30. *Commercial Course, M.....                   | 1 |
| 9:30.           | Agriculture, T. Th. S.....                   | 3                | 9:30. Agriculture, T. Th. S.....                   | 3 |
| 9:30.           | English, M. W. F.....                        | 3                | 9:30. English, M. W. F.....                        | 3 |
| 10:30-12:30.    | *Shop work, T. Th. S.....                    | 3                | 10:30-12:30. *Shop work, T. Th. S.....             | 3 |
| 11:30.          | Physics, M. W.....                           | 2                | 11:30. Physics, M. W.....                          | 2 |
| 1:30.           | *Drawing, M. W.....                          | 2                | 1:30. *Drawing, M. W.....                          | 2 |
| 1:30.           | *Laboratory, Physics, S.....                 | 1                | 1:30. *Laboratory, Physics, S.....                 | 1 |
| 4:00.           | Military Science (optional) ..               |                  | 4:00. Military Science (optional) ..               |   |

#### *Second Year.*

| First semester. |  | Second semester. |   |   |
|-----------------|--|------------------|---|---|
| 8:30.           | Agriculture, M. W.....                       | 2                | 8:30. Horticulture, M. W.....                 | 2 |
| 9:30.           | English, T. Th. F. S.....                    | 4                | 8:30. *Horticulture Laboratory, F. 1          |   |
| 9:30.           | Chemistry, M. W.....                         | 2                | 8:30. Animal Physiology, T. Th. S. 3          |   |
| 10:30.          | Algebra and Geometry, T. W.<br>Th. F. S..... | 5                | 9:30. Systematic Botany, T. Th. S. 3          |   |
| 10:30.          | *Stock Judging, M.....                       | 1                | 9:30. Chemistry, M. W.....                    | 2 |
| 1:30.           | *Chemical Lab., T. W.....                    | 2                | 10:30. Algebra and Geometry, T. Th.<br>S..... | 3 |
| 1:30.           | *Shop work, M. S.....                        | 2                | 10:30-12:30. *Drawing, M. W.....              | 2 |
| 1:30.           | *Drawing, Th. F.....                         | 2                | 1:30. *Shop work, M. F.....                   | 2 |
| 4:00.           | Military Science (optional) ..               |                  | 1:30. *Chemical Lab., T. W.....               | 2 |
|                 |  |                  | 4:00. Military Science (optional) ..          |   |

#### *Third Year.*

| First semester. |   | Second semester. |   |
|-----------------|---|------------------|---|
| 8:30.           | Horticulture, T. Th. S..... 3           | 8:30.            | Forestry, T. Th. .... 2                 |
| 8:30.           | Veterinary Science, M. W. F. 3          | 8:30.            | Veterinary Science, W. S..... 2         |
| 9:30.           | Agricultural Chemistry, T. Th. S..... 3 | 9:30.            | Agricultural Chemistry, T. Th. S..... 3 |
| 10:30.          | Vegetable Physiology, T. Th. S..... 3   | 10:30.           | Vegetable Physiology, T. Th. S..... 3   |
| 1:30.           | *Laboratory, Physics, M. W. F..... 3    | 10:30.           | Climatology, F..... 1                   |
| 1:30.           | *Veterinary Clinics, Th..... 1          | 10:30.           | Landscape Gardening, M. W. 2            |
|                 | Elective..... 3                         |                  | Elective..... 5                         |



*Fourth Year.*

| First semester. |                              | Second semester. |                              |
|-----------------|------------------------------|------------------|------------------------------|
| 8:30.           | Agriculture, T. Th. S..... 3 | 8:30.            | Agriculture, T. Th. S..... 3 |
| 8:30.           | Entomology, M. W. F..... 3   | 10:30.           | Geology, T. W. F..... 3      |
| 11:30.          | Economics, M. W. F..... 3    | 11:30.           | Economics, M. W. F..... 3    |
| 11:30.          | Bacteriology, T. Th..... 2   | 11:30.           | Bacteriology, T. Th..... 2   |
|                 | Elective..... 6              |                  | Elective..... 6              |

In the case of all the subjects starred [\*] in the above table, no preparation is required, hence two and one-half times the number of hours given above are spent in the Shop, in the Drawing and the Commercial rooms, and in all Laboratory work.

**Elective Work :**

On reaching their third year, students in the School of Agriculture are required to elect one of the following groups of subjects: (a) Agriculture and Entomology; (b) Agriculture and Chemistry; (c) Botany and Entomology; (d) Horticulture and Botany; (e) Horticulture and Entomology; (f) Dairying and Chemistry; (g) Animal Husbandry and Veterinary Science; (h) English, French, or German. At least two hours each must be given to these electives during the four semesters of the third and fourth years, except when the heads of departments, by an exchange, arrange for the student to take all four hours of a subject in one semester. The student's other elective work may be chosen from the general list of electives offered in this College.

**Thesis :**

As a requisite for graduation, each candidate must present an acceptable thesis, based on the results of original research. The subject must be announced to the Dean with the approval of the head of the department within which it lies not later than the beginning of the second semester of the senior year. The completed thesis must be submitted not later than the second Saturday before Commencement day.

**V. A TWO YEARS' GRADUATE COURSE.**

This course is designed to give graduates of this College and of other Colleges of similar character such professional training as agriculturists, horticulturists, entomologists, agricultural chemists, as will fit them to teach one of these subjects in Agricultural Colleges, and do work along one of these lines in Experiment Stations.

Students who complete this course, and present a creditable thesis evincing capacity for original research and power of independent thought, will receive the degree of Master of Agriculture (M. Agr.).

## Agriculture.

Professor MUMFORD.

The instruction in this department is thoroughly practical, and is intended to give a knowledge of the application of the natural sciences to the complex operations of agriculture. Lectures and recitations are supplemented by practical demonstrations on the farm. In the class-room the student becomes familiar with the best rations, and in the barns feeds the rations, and determines their practical value. The student in dairying goes through the whole process of making butter, repeating the work until he becomes familiar with it. The study of live-stock is based upon an examination of a large number of animals, so that the student begins the subject with a knowledge of the best types for various purposes.

1a. The Soil. *First semester, T. Th. S., at 9:30.* Dean WATERS.

(First Year.)

A study of the origin, formation, distribution, and classification of soils with reference to their agricultural value; the conditions of fertility and the circumstances that influence it; indications of fertility, barren and exhausted soils; improvement of soils; physical properties of soils, including their relations to air, water and heat; capillarity, diffusion and solution, as related to soil texture; farm drainage, including methods of construction, irrigation, tillage, plowing, subsoiling, harrowing, etc.

1b. Principles of Manures and Manuring. *Second semester, T. Th. S., at 9:30.*

Dean WATERS.

(First Year.)

Constituents of Plants, sources and specific action of the various elements of plant food; crops and materials used as fertilizers; methods of farming in relation to the conservation of fertility.

*Farm Crops.*—Plant breeding; variation, selection, self and cross fertilization; practical methods for increasing the yield of crops; conditions of germination and plant growth; rotation of crops; planting, growing, harvesting and storing crops. The results of experiments at the Stations are used in discussing the best methods of culture. The Missouri Experiment Station offers excellent opportunities for the illustration of this work.

2a. Animal Husbandry. *First semester, M. W., at 8:30; M., at 10:30.* Pro-

fessor MUMFORD.

(Second Year.)

This work begins with a careful study of the types of domestic animals. The score card is the basis in judging beef and dairy cattle, draft and light horses, mutton and wool sheep, swine and poultry. After the student has become familiar with the most approved types, he studies the principles and methods of successful breeding, heredity, atavism, variation, selection, fecundity, influence of environment, in-breeding, cross-breeding, grading, influence of a previous impregnation, controlling sex, etc.

- 3a. Agricultural Engineering. *First semester, T. Th. S., at 8:30.* Professor MUMFORD. (Fourth Year.)

Construction of barns, stables and other shelters; plans for building silos, fences, etc. Road building is considered with special reference to country roads. Some attention is given to the mechanics of farm implements and machines. For this purpose a new self-registering dynamometer has been provided. There is also a model of a horse arranged for determining by experiments, the influence on draft of direction of traces, weight of horse, strength of hock muscles, etc.; and also an appliance for measuring the resistance to attractive force of incline and obstruction.

- 3b. Stock Feeding. *Second semester, T. Th. S., at 8:30.* Professor MUMFORD. (Fourth Year.)

The Laws of animal nutrition; composition of the animal body; fodders the source of nutrients; digestion, resorption, circulation; respiration and excretion; formation of muscle, flesh and fat; composition and digestibility as determining the value of feeding stuffs; their preparation and use; feeding for fat, for milk, for wool, for work and for growth. A portion of the time is devoted to practicals, in which the student is required to compound rations and feed them, carefully recording results.

- 4b. Agriculture. *Second semester.* Dean WATERS. (Short Winter Course.)

Twenty-five lectures on manures and their application and on stock feeding—composition and digestibility of fodders; steaming, cooking and grinding foods, and feeding for growth, fat, milk, wool or labor. (See special circular of Short Winter Course.)

- 5b. Agriculture. *Second semester.* Professor MUMFORD.

(Short Winter Course.)

Sixty lectures on farm equipment; the properties and uses of construction materials; building barns, stables, shelters, silos and other farm structures; farm crops, tillage rotation, cultivation, harvesting, and storing; breeds and breeding; stock judging; scoring animals to determine the best types for beef, milk, mutton, wool, etc. This work is all performed at the farm barns, and students acquire considerable proficiency in judging stock. (See special circular of Short Winter Course.)

- 6b. Dairying. *Second semester.* Mr. ———. (Short Winter Course.)

Selection, breeding, and feeding of dairy cows; modern methods of butter and cheese making. Fifty hours of practical work in the dairy building are devoted to separating and testing milk, ripening cream, churning, working, salting, coloring, and packing butter for market. (See special circular of Short Winter Course.)

- 7a. Judging Live Stock. *First semester.* Professor MUMFORD. (Elective.)

Advanced work with the score card, and a study of breed characteristics. The college farm, well equipped with typical specimens of the leading breeds of live stock, offers excellent opportunities for this work.

7b. Experiments in Agriculture. *Second Semester.* Professor MUMFORD.

(Elective.)

The work consists of lectures on methods of Experiment Station work and critical studies of bulletins. The student is required to make abstracts of a sufficient number of bulletins, bearing on a selected line of work, to become familiar with their scope and aim. He is also required to plan and conduct an original experiment, using the results obtained as the basis for a thesis.

8b. Dairying. *Second semester.* Professor MUMFORD.

(Elective.)

Breeding and improvement of the herd; management and equipment of the farm dairy. One-half of the student's time is devoted to practical work in the College dairy, which is fully equipped.

Courses 1a, 1b, and 2a are required for the certificate in Agriculture.

Courses 1a, 1b, 2a, 3a, and 3b are required for B. Agr.

Courses 4b, 5b, and 6b are required for students in Short Winter Course.

**Facilities for Instruction :**

*Libraries.*—The Agricultural Library contains more than 600 bound volumes and 5,000 pamphlets. One of the most valuable features of this library is a complete file of the publications of every Experiment Station in the United States, systematically arranged, and fully indexed. Files of the leading agricultural papers are accessible in the reading room. The general library of the University contains many volumes of great interest to students in agriculture.

*The Agricultural Museum.*—The value of a museum is mainly in furnishing illustrative material for study, and for this purpose the Agricultural Museum is well adapted. It contains a collection of wool fibers illustrating the influence of breeding and environment; a large assortment of cotton fibers and of fiber plants from various countries, and a systematic collection of the agricultural grasses of the United States. The forest woods of the State are represented by block specimens showing cross and transverse sections and bark characteristics, and by a collection of polished boards. Several hundred models of early patents of farm machines occupy a considerable portion of the museum. In live-stock there are skeletons of a horse, and hog, and two stuffed specimens of the wild white cattle of Great Britain.

*The Farm.*—The farm is fully equipped with improved agricultural machinery, a dairy building, hay and stock scales, sheep, cattle and horse barns and model swine pens. The farm and its equipment is used primarily for the instruction of students.

*The Live Stock.*—For the instruction of students in animal husbandry, the farm maintains typical specimens of the leading breeds of live stock. Among the breeds of cattle are a fine herd of Jerseys, and excellent specimens of Short-horns, Aberdeen Angus, and Herefords. A herd of grade steers are fatted each season. There are specimens of the leading breeds of sheep, swine, and poultry, together with grade animals.

*The Dairy.*—The College has, during the current year, equipped a dairy with several Babcock milk testers, aerators, improved milk and cream vats, various styles of separators, churns and butter workers, and with a complete sterilizing outfit for pasteurizing milk and cream on a large scale.

*The Experiment Station Field* —The field experiments of the Missouri Experiment Station offer exceptional opportunities for the study of comparative methods of cultivating and growing farm crops.

## Horticulture.

Professor WHITTEN.

The following courses are offered:

- 1b. Horticultural methods. Lectures. *Second semester, M. W., at 8:30; F., at 1:30.* Professor WHITTEN. (Second Year.)

The work consists of lectures, supplemented by required readings and practical exercises. The propagation, transplanting, cultivation, pruning, gathering, and marketing of fruits and vegetables, are the principal topics discussed. When necessary, the lectures are given in the field, the green-houses, or the propagating rooms, in order that they may be illustrated by practical object lessons. Each student is required to make cuttings and grafts, prepare composts, sow seeds, transplant, prune, etc., performing as many of the various horticultural operations as the time will permit.

- 2a. Science of Horticulture. Lectures. *First Semester, T. Th. S., at 8:50.* Professor WHITTEN. (Third Year.)

Principles underlying the various horticultural operations. Plant growth and behavior of plants under culture; variation, selection, and crossing with reference to plant breeding. In this course the aim is to acquaint the student with the reasons for the various horticultural operations—how and under what conditions seeds germinate, cuttings take root, grafts unite, and wounds heal; what environments cause variation in plants; how our cultivated plants are brought to perfection from their wild types; and how and why cultivation affects plants.

- 3b. Forestry. Lectures. *Second semester, T. Th., at 8:30.* Professor WHITTEN. (Third Year.)

In this course are considered the influence of forestry on climate, soil, and flow of streams; the management of forests; the characteristics and uses of typical woods; the specific characters of our principal forest trees in their winter condition; and something of the first geography of the country.

- 4b. Landscape Gardening. Lectures. *Second semester, M. W., at 10:30.* Professor WHITTEN. (Third Year.)

The laying out and planting of ornamental grounds, the making of roads, lawns, flower and shrubby borders, the consideration of trees, shrubs and flowering plants, are the principal topics of this course.



5. General Horticulture. (Twelve Weeks' Winter Course in Agriculture.) Forty Lectures. Professor WHITTEN.

Construction and management of hotbeds and cold frames; propagation of plants, including germination of seeds, making cuttings, budding, grafting, and layering; pruning and cultivating orchards and small fruits, and spraying for insects and fungous diseases; originating and improving varieties of fruits and vegetables by cross-fertilization, selection, and cultivation. (See circular of Short Winter Courses.)

6. Nursery Work. Through January, in Winter School of Horticulture Lectures and Laboratory. By a practical nurseryman.

Twenty-four lectures on Practical Nursery Work embracing grafting, budding, packing for storage or shipment, growing and grading nursery stock, etc. In addition to the lectures, twelve afternoons will be devoted to the actual work of grafting, budding, grading, packing, etc.

7. Orchards and Small Fruits. Through February, in Winter School of Horticulture. Lectures and practical exercises. By a practical orchardist.

Twenty-four lectures, treating of soils and localities adapted to fruit; varieties; time and manner of planting; pruning; cultivation and general treatment; harvesting and marketing fruits. Twelve afternoons will be devoted to practical work in laying out and planting and pruning orchards; and to grading and barreling apples.

8. Market Gardening, and Hotbed Forcing. Through March, in Winter School of Horticulture. Lectures and practical exercises. By a practical market gardener.

Twenty-four lectures treating of the planting, growing, and marketing of the ordinary garden crops, such as cucumbers, mushrooms, radishes, lettuce, parsley, onions, etc.; hotbed construction; mixing of soils, planting, transplanting, and watering, bunching, marketing, and hotbed methods. In addition to these lectures, twelve afternoons will be devoted to practical work in growing tomatoes, asparagus, pieplant, lettuce, radishes, etc.

9. Floriculture, Landscape Gardening, and Fungous Diseases and Fungicides. In Winter School of Horticulture. Lectures. Professor WHITTEN.

*Floriculture* —Ten lectures and four practical exercises in the propagation and culture of flowers, including the making of cuttings, the mixing of soils, potting, watering, managing temperatures, germination of seeds, marketing cut flowers, etc.

*Landscape Gardening*.—Ten lectures on the laying out and planting of grounds, the making of drives and walks, the planting, pruning and management of trees, shrubs, and flowers.

*Fungous Diseases and Fungicides*.—Twenty lectures setting forth the nature of the destructive diseases of orchard trees, small fruits, and other plants. The causes of the various rots, blights, rusts, mildews, scabs, and other fungous diseases which prevail in our State will be



described, and specimens of diseased fruits and plants will be shown as object lessons, in the class room, so that the students will be able to recognize them. The nature of the attacks of these diseases upon plants, and how they spread from tree to tree and orchard to orchard, will be made plain. The best means of checking their attacks by sanitary methods and by spraying will be discussed and ample practice will be given in mixing, testing, and applying spraying solutions.

- 10a. Horticulture Laboratory. *First semester, M. W. F., at 8:30.* Professor WHITTEN. (Fourth Year Elective.)

Preceding courses are required. This course provides for carrying on independent lines of investigation—Variety study of fruits or vegetables on the grounds; propagation of plants under various conditions of heat, moisture, sunlight, etc., in the greenhouse and hotbeds; treatment of refractory seeds, and seed testing.

#### Facilities for Instruction :

The Horticultural grounds include 32 acres, containing a well-planted lawn, with shrubbery and flower borders, collections of various kinds of small fruits and grapes, and representative varieties of stone fruits, apples and pears. Over 500 varieties of orchard fruits are now growing on the grounds. Nut trees from selected stock are being put out, and our native wild fruits are being collected and planted. Many kinds of vegetables are grown every year. A class-room, an herbarium and seed room, a photographic room and a library have been equipped in a substantial brick building on the Horticultural grounds. A greenhouse, one of the finest in the State, has just been erected for practical work in Horticulture. This, together with a commodious propagating house and range of hotbeds, affords ample opportunity for teaching methods of propagating and forcing plants. The department has a Horticultural herbarium of moderate size. The experiment orchards, vineyards, vegetable plots and nurseries afford excellent facilities for instruction in horticulture. The department has a file nearly complete of the Experiment Station literature of the country, the Experiment Station card-index to this literature, the reports and proceedings of various State horticultural societies, and the leading horticultural journals. The Horticultural library has been increased to more than six times its former size, and it now contains many valuable cultural and scientific treatises, which afford good opportunity for research in practical methods and in the sciences that underlie them. These works are systematically arranged, and are being indexed. The Experiment Station literature is systematically arranged in chronological order, in convenient filing cases. The department has also received about 700 jars of preserved fruits and vegetables exhibited at the World's Fair, and has a good collection of seeds and of horticultural products.

## Entomology.

Professor STEDMAN.

The instruction in Entomology is given by lectures supplemented by laboratory and field work. As far as practicable the student collects and studies his own specimens. The collecting is done systematically in the fall while the insects are still alive; later the field work is entirely replaced by laboratory work. The collecting includes the work done by insects, as well as their eggs, larvæ, pupæ, and adults, while their habits and economy receive due attention. The lectures cover the external and internal anatomy, life histories, habits, economy, and classification of insects; the characteristics of the orders, sub-orders and principal families, with special emphasis upon those of economic importance, and the best methods of combatting their ravages. The laboratory work embraces the study, by means of actual specimens, of the internal and external anatomy, life histories, habits, economy, breeding, identification or determination of genera and species, and the classification of those insects found in our fauna; and also economic work and original investigation for advanced students.

The following courses are offered:

- 1a. General Entomology. (1) Lectures. Internal and external anatomy, life histories, habits, economy, characteristics, classification, methods of destruction, machines and insecticides, Apiculture. *First semester, W. F., at 8:30.* (2) Laboratory work, collecting, preserving, breeding, methods, habits, life histories, work, external anatomy, identification or determination of orders, families and genera, classification. *First semester, M., at 1:30.* (Fourth Year.)

2. Economic Entomology. (For students in the Short Winter Course.)

See special catalogue, to be issued in October, 1897.

- 3b. Advanced Entomology. Lectures and Laboratory work. Internal anatomy, histology, physiology, embryology, breeding, life histories, habits, economy, distribution, dimorphism, mimicry, determination of species, classification. *Second semester, at hours to be appointed.* (Fourth Year Elective.)

Must be preceded by Course 1a.

4. Graduate work in Entomology. Laboratory work. Monographing a group (scientific), monographing a species (economic). *Both semesters, at hours to be appointed.*

Must be preceded by Course 3b.

All courses in Entomology are elective for Academic and other students. Agricultural students may elect Course 3b in the Senior year, and Course 4 in the Graduate years.

**Facilities for Instruction and Research:**

The Entomological Department occupies the second floor of the Horticultural Building. The laboratory contains an Entomological Cabinet illustrating the habits, work, and life histories of the more important injurious and beneficial insects; also, several thousand species of adult insects from all orders, correctly classified and labeled, and accessible to the student for reference and comparison, as well as for use in illustrating the lectures.

The general laboratory is supplied with compound microscopes, dissecting instruments, glassware, a large microtome, paraffine bath, hot oven, large and small breeding cages and jars, aquaria, spraying machines of various kinds, insecticides, and reagents. The Department subscribes for and receives twelve current periodicals on the subject of Entomology. These are kept in the laboratory in connection with the department library, and are accessible to the students at all times.

## Agricultural Chemistry.

Professor SCHWEITZER.

1a. Agricultural Chemistry. *First semester, T. Th. S., at 9:30.* (Third Year.)

General introduction; functions of the plant, including production, conversion, transportation, deposition of organic matter; physiological structure of the cell; respiration; the green cell, an apparatus for doing work dependent upon light and heat; nitrogenous constituents of the plant and their relation to free and combined nitrogen; mineral constituents; membraneous diffusion; assimilation; conditions of vegetation.

1b. Agricultural Chemistry. *Second semester, T. Th. S., at 9:30* (Third Year.)

Soil,—its formation, composition, alteration by mechanical, chemical, biological agencies; its relation to light, heat and moisture. Soil physics in general. Manures, natural and artificial; their composition, application, value. Theory of rotation of crops; extensive and intensive cultivation; industrial agriculture in general. Farm sanitation; air, respiration, vitiated air and ventilation, infection, contagion, germ theory of disease. Water: potable water, hard and soft; impurities in it, and their effects upon health and life. Food, composition and general properties; preservation of food, and food adulterations.

## Veterinary Science.

Drs. CONNAWAY, WHITE, and BOLTON.

1b. The Anatomy, Physiology and Hygiene, of the domesticated animals.

*Second semester, T. Th. S., at 8:30.* Professor CONNAWAY.

(Second Year.)

This course is given by lectures, and laboratory work, the latter consisting of the complete dissection of one or more animals, and a

comparative study of such organs as show variations in the different species; charts, models, and prepared specimens will also be available for illustrating this study. Practical demonstrations will be given in the Physiological laboratory of the more important functions of the animal body. The study of food stuffs and the action of the digestive fluids will receive special attention.

- 2a. Veterinary Medicine and Surgery. *First semester, M. W. F., at 8:30.*  
Professor CONNAWAY. (Third Year.)

The first half of the semester is devoted to the study of those diseases that affect the internal organs: as the lungs, stomach, intestines, urinary organs, etc.; the second half of the semester is given to the study of the diseases and conditions that require surgical treatment: as lameness, wounds, abscesses, tumors, etc. A clinic is held one afternoon of each week for the treatment of the diseases discussed in the classroom. In proper season instruction is given in castration, spraying, and caponizing.

- 3b. Contagious and Infectious Diseases, and Quarantine regulations. *Second semester.* Dr. WHITE. (Third Year.)

A series of lectures by Dr. T. E. White, State Veterinarian, on Glanders, Anthrax, Black leg, Tuberculosis, *maladie du coit*, Texas fever, etc., and the means by which these diseases are controlled.

- 4a. Bacteriology. Lectures, and recitations, with about eight weeks of daily practice in the cultivation of bacteria upon artificial media, and the bacteriological examination of water, air, soil, milk, butter, and cheese. Text, Abbot's Principles of Bacteriology. *First semester, T. Th., at 11:30.* Dr. BOLTON. (Fourth Year.)

- 4b. Bacteriology. A study of the pathogenic germs affecting man and the domesticated animals. *Second semester, T. Th., at 11:30* Dr. BOLTON. (Fourth Year.)

## Mechanic Arts.

Professor MARX; Mr. PLACE; Mr. MASON.

The following courses are offered:

1. Wood-working and Pattern-making. *M W F, at 10:30-12:30.*  
(First Year.)

This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with the use of some tool. The course, as a whole, is expected to enable the industrious student easily and exactly to perform any ordinary operation familiar to the carpenter, to the joiner, and the pattern-maker. Time permitting, these exercises are followed by practice in making parts of structures, joints, small complete structures, patterns, core-boxes, and other constructions in wood. Particular attention is paid to the details of pattern making.

2. Forging. *First semester, M S, at 1:30; Second semester, M. F., at 1:30.*  
(Second Year.)

These courses are expected to give the student not only a knowledge of the methods of the blacksmith, but also manual skill in the handling of tools.

3. Machine-work (For Junior Engineering). *M. W. F.*, at 1:30.

The instruction in the machine-shop, as at the forge, is carried on in substantially the same manner as in the wood-work. The course begins with a series of graded exercises, which give the student familiarity with the tools of the craft, and with the operations for which they are particularly designed, and ends with practice in the construction of parts of machinery, and, time permitting, in the building of complete machines.

Courses 1 and 2 are for students in the College of Agriculture and Mechanic Arts, and for Engineers. Course 3 is for Engineers only.

For statement and description of facilities of instruction, see announcement of the School of Mechanic Arts, pages 126-7.

## Drawing.

MR. PLACE, Instructor.

Three courses are offered: 1. For Students in the Normal Department; 2. For Students in the College of Agriculture and Mechanic Arts; 3. For Students in Engineering.

1. Normal Drawing. The object of this course is to show what kind of drawing should be taught in our district schools, and how to teach it. The National Drawing System and text-books have been adopted for this course. Students that have done good work elsewhere in this system will be given credit for it.

2. Agricultural Drawing. The course is especially arranged to be of practical value to the farmer in designing buildings, machinery, and in planning repairs about the farm.

3. Engineering Drawing. This course is very complete, and it is expected that the student will be a thorough draughtsman when he has finished it. Briefly, it consisted of geometrical projections, round writing, lettering, free-hand drawing, problems in descriptive geometry, elements of machine drawing, colored and pen topography, tracing, blue-printing, and brush shading.

Desks and lockers are provided by the University; all instruments, materials, supplies, etc., are to be furnished by the student.

## Commercial Studies.

MISS PORTER.

The work in this course does not cover that provided by a full Business College Course, but is designed for those who wish to conduct and record the ordinary business transactions of every-day life in a business-like and systematic manner.



To this end instruction is given in correspondence, making out bills and statements, writing receipts, cheques, notes and drafts, together with the use of the various account books. An important part of the work will be a thorough drill in journalizing, concluding with the writing up of entire sets of books, that the student may make a practical application of his previous work in the various business forms.

This work is required in both semesters of the First Year.

*Stenography.*—A course in stenography is provided for those students who wish to carry on the study while prosecuting regular work in the University.

Three hours of class room work, supplemented by at least the same time of preparation, are required. The first semester will be devoted to thorough drill in the principles of the system adopted, and the second semester to an application of these principles in reading and dictation exercises. These exercises will include correspondence, addresses, and court-reporting. At the end of the year it is expected that the student will have attained a speed of from sixty-five to ninety words a minute, according to his application to the work. During the first year more attention is given to accuracy in writing and *reading*, than to practice for speed.

Those wishing to make the study valuable will continue dictation exercises during the second year.

## Military Science.

Lieut. THURSTON.

An officer of the regular army is detailed by the War department as Professor of Military Science and Tactics, to carry out the provisions of the act of Congress of 1862, which, in endowing this and similar institutions, stipulates that military tactics shall be taught.

Students taking this instruction are required to conform to the special rules and regulations prescribed for the Military department. These requirements are so adjusted as to harmonize with the regular class-work.

The instruction offered in this Department is open to all students of the University. Military drill is given at least three times a week, from 4 to 5 o'clock. Each Senator and Representative of the General Assembly of Missouri, is authorized by law to appoint two cadets from his district. Such cadets are matriculated in the Academic and Agricultural Departments free of tuition and other fees, except Laboratory deposits. For information about cadetships, uniforms, cadet band, equipment in artillery and small arms, see announcement of the Department of Military Science and Tactics, pages 95-99.



## English.

Assistant Professors PENN and BELDEN.

The courses in English embrace the study of language, composition, and literature, arranged as follows:

- 1a. Essentials of English. The Grammar of English, with readings and exercises. Shakspeare's "Tempest," or some like classic, will be used in the class-room. *First semester, M. W. F., at 9:30.* (First Year.)
- 1b. Essentials of English. Analysis, Word Formation, and Composition, with readings in some masterpiece, exercises, and weekly compositions. *Second semester, M. W. F., at 9:30.* (First Year.)

Longman's English Grammar (revised) and Keeler and Davies' Studies in English Composition will be the text-books and basis for the work in courses 1a and 1b.

- 2a. Composition, and Literature. Readings, class-room interpretation, accompanied by constant essay work. *First semester, T. Th. F. S., at 9:30.* (Second Year.)

The masterpieces announced for the English entrance examination of the following session will, so far as convenient, constitute the work. See pages 41-43.

## Political Economy.

\*Professor HICKS; Acting Professor LOEB; Acting Assistant Professor HAMMOND.

The following courses are required:

- 1a. Theory of Economics. *First semester, M. W. F., at 11:30.* (Fourth Year.)
- 2b. Theory of Finance. *Second semester, M. W. F., at 11:30.* (Fourth Year.)

Course 2b must be preceded by 1a.

## Mathematics.

MR. CAUTHORN.

The following courses are required:

1. Elementary Algebra. *T. Th. S., at 8:30.* (First Year.)  
Text: Hall & Knight's Elementary Algebra (Revised by Sevenoak).

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\*Absent for session of 1896-7.

2. Plane Geometry. *W. F., at 8:30.* (First Year.)  
Text: Chauvenet's Plane Geometry.
- 3a. Elementary Algebra. *First semester, T. Th. S., at 10:30.* (Second Year.)  
Text: Same as in Course 1.
- 4a. Plane Geometry. *First semester, W. F., at 10:30.* (Second Year.)  
Text: Same as in Course 2.
- 5b. Algebra and Geometry. *Second semester, T. Th. S., at 10:30.* (Second Year.)

Candidates for admission to any of these courses must pass a satisfactory examination on Arithmetic.

## Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

The following courses are required:

- 1a. Elementary Physics. *First semester, M. W., at 11:30; S., at 1:30.* (First Year.)
- 2b. Elementary Physics, and Laboratory. *Second semester, M. W., at 11:30; S., at 1:30.* (First Year.)
- 3a. Advanced Physics. *First semester, M. W. F., at 1:30.* (Third Year.)

For further information, see Physics, in Academic department, page 69.

## Chemistry.

Professor BROWN; Assistant Professor CALVERT; Mr. DINSMOOR.

The following courses are required:

- 1a. Elementary Chemistry. *First semester: Lectures, M. W., at 9:30. Laboratory, T. W., at 1:30.* Professor BROWN, and Mr. DINSMOOR. (Second Year.)
- 1b. Qualitative Analysis. *Second semester: Lectures, M. W., at 9:30. Laboratory, T. W., at 1:30.* Assistant Professor CALVERT, and Mr. DINSMOOR. (Second Year.)

The following courses are elective:

- 4b. Quantitative Analysis. See page 70.
3. Sanitary and Physiological Chemistry.  
For details, see page 92.

## Botany.

Professor AYERS; Mr. THOMPSON.

- 1b. Systematic Botany. Recitations, and identification of the local phanerogamic flora. *First semester, T. Th. S., at 9:30.* (Second Year.)

Text-book: Gray's Manual and Lessons in Botany. The main object of this course is to familiarize the student with the local flora, especial attention being devoted to the native useful and harmful plants.

- 2a. Vegetable Physiology. Lectures and laboratory. *First semester, T. Th. S., at 10:30.* (Third Year.)

- 2b. Vegetable Physiology. Lectures and laboratory. *Second semester, T. Th. S., at 10:30.* (Third Year.)

Text-book for Courses 2a and 2b, Bergen's Elements of Botany and Vine's Physiology of Plants. These courses are intended to introduce the student into the elements of the structure and functions of plants (*First semester*), and to give him special laboratory practice in the physiological problems of several species of important economic plants.

## Geology.

Emeritus Professor BROADHEAD; Mr. MARBUT.

The following course is required:

- 4b. Economic Geology. *Second semester, T. W. F., at 10:30.* (Fourth Year.)

This course deals with subjects from their economic aspect, such as water supply, mineral springs, fertilizers, the origin and relation of soils to the underlying rock structure, clays, cement, etc. Text-book: Tarr's Economic Geology.

## Climatology.

Mr. A. E. HACKETT.

- 1a. Climatology. *First semester, M., at 10:30.* (Third Year.)

This course covers Elementary Meteorology, the laws of storms; weather forecasts, how made, and distributed, and the advantages to be derived from them; frosts, how they may be anticipated, and what measures may be taken to prevent damage therefrom; weather charts and their uses; the climate of Missouri; local climatic peculiarities, and their effects upon certain crops.

**B. SCHOOL OF MECHANIC ARTS.**

CHRISTIAN WILLIAM MARX, B. E.,

*Superintendent.*

ARTHUR HARRINGTON PLACE, C. E.,

*Instructor in Drawing.*

ELLIOTT JEFFRIES MASON, B. S.,

*Instructor in Mechanic Arts.*

The University has not developed the School of Mechanic Arts as separate on the one side from the School of Agriculture, and on the other side from that of Engineering. While the courses in Mechanic Arts are open to students of all departments, and are taken by some in every department, the great majority of the students taking this instruction belong to the School of Agriculture or to that of Engineering. Hence, they are taught in English, Modern Languages, Mathematics, the Sciences, and other studies, by a number of teachers, whose names are given in the Faculty of the School of Agriculture, or that of the School of Engineering.

**Facilities for Instruction:**

The building for Mechanic Arts, 108×117 feet, has two stories and a basement. It contains six work-shops 40×40 feet, an exhibit hall 25×40, two offices 16×18, one drawing-room 40×40, two class-rooms 18×22, besides store-rooms, an engine-room, lavatories, etc. The machinery is driven by a 60-horse power Corliss engine.

Four hundred students in classes of 24, each class occupying two hours and a half a day, can easily be taught. The carpenter and pattern shop has accommodations for four classes of 24 students each. Each student has for his exclusive use a lock-drawer and a set of tools, for the care and safety of which he is held responsible.

There are 25 speed lathes for wood turning, 25 sets of bench tools, 96 sets of edge tools, and as many lock-drawers.

The blacksmith-shop is equipped with 25 forges, 25 anvils, and 25 sets of anvil and forge tools.

The machine-shop is equipped with three screw-cutting engine lathes 14" swing, 8' bed; one screw-cutting engine lathe 18" swing, 8' bed; one polishing lathe 12" swing, 6' bed; one 26×26 Gray planer; one 18" crank-shaper; one pipe-cutting and threading machine; one wet and dry emery grinder and surfacer; one 24" drill-press; and with tool-room and ample bench outfit.

The blast for the forges is supplied by a power blower. A 48" exhaust fan keeps the shops cool and free from smoke and gases, even when all fires are going in the forges.

Two large shops, each 40×45 feet, are as yet unfurnished, but will be equipped with benches and speed lathes or moulding outfit to suit the demands of the future.

The whole building is lighted by a 360-lamp dynamo, situated in the engine-room.

The teaching is by lectures. The instructor at the bench, machine, or anvil fully explains the principles to be used, and all work involving new principles is executed in the presence of the whole class. Free use is made of drawings and the black-board.

When every step has been explained, the class proceeds to the execution of the work, while the instructor superintends and gives help to such as need it.

A series of 25 or 30 graduated exercises is given in each shop. All the work is disciplinary; special trades are not taught, nor are articles manufactured for sale. The value lies in the educational result of each exercise, in training the mind and hand to act simultaneously—the hand at the will of the mind.

#### **Courses:**

The School of Mechanic Arts offers several elementary courses to students in the School of Agriculture, which are announced on page 120. A four-years' course is outlined in Mechanical Engineering (see page 134), which leads to a professional degree.

For information as to tuition fees and other expenses, see page 22.

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### **C. SCHOOL OF ENGINEERING.**

#### **FACULTY.**

RICHARD HENRY JESSE, LL. D.,

*President.*

HENRY JACKSON WATERS, B. A. S.,

*Dean of the Faculty.*

CHRISTIAN WILLIAM MARX, B. E.,

*Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.*

HARRY THOMAS CORY, M. M. E., C. E.,

*Professor of Civil Engineering.*

HOWARD BURTON SHAW, B. C. E., A. M.,

*Assistant Professor of Electrical Engineering.*

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

*Professor of Mathematics.*

EDWARD ARCHIBALD ALLEN, Litt. D.,

*Professor of English.*

HENRY CAPLES PENN, A. M.,

*Assistant Professor of English.*

GARLAND CARR BROADHEAD, M. S.,

*Emeritus Professor of Geology.*

MILLARD LEWIS LIPSCOMB, A. M.,

*Professor of Physics.*

MILTON UPDEGRAFF, M. S., B. C. E.,

*Professor of Astronomy, and Assistant Professor of Mathematics.*

LUTHER MARION DEFOE, A. B.,

*Assistant Professor of Mathematics.*

SIDNEY CALVERT, B. Sc., A. M.,

*Assistant Professor of Chemistry.*

BENJAMIN FRANKLIN HOFFMAN, M. L.,

*Professor of Germanic Languages.*

HENRY MARVIN BELDEN, B. A., Ph. D.,

*Assistant Professor of English Language and Literature.*

RAYMOND WEEKS, A. M.,

*Professor of Romance Languages.*

WILLIAM GEORGE BROWN, B. S., Ph. D.,

*Professor of Chemistry.*

SILAS DINSMOOR, A. B.,

*Instructor in Chemistry.*

ARTHUR HARRINGTON PLACE, C. E.,

*Instructor in Drawing.*

WILLIAM WALTER GRIFFITH, B. S.,

*Instructor in Physics.*

CURTIS FLETCHER MARBUT, B. S., A. M.,

*Instructor in Geology.*

ELLIOTT JEFFRIES MASON, B. S.,

*Instructor in Mechanic Arts.*

EDGAR E. BRANDON, A. B.,

*Teaching Fellow in Romance Languages.*

INEZ RIGGS, M. L.,

*Teaching Fellow in Germanic Languages.*



**Requirements for Admission:**

The following are the requirements for admission to the Freshman Class for the session of 1897-98.

1. French or German—two years' work.

The two years' work in German means the ability to read at sight ordinary German prose, and to translate simple English sentences into German, and includes a correct pronunciation of the language. Two years' work in French means a like ability in French. For the present the University provides instruction for such students as have not had the two years of French or German required for entrance, and are therefore conditioned thereon.

2. English. Same as for the Academic department. See pages 41-42.

3. Mathematics. Algebra and Plane Geometry. The equivalent of Smith's Elementary Algebra, and of Wentworth's or Bowser's Plane Geometry is required.

4. Science. One year's work each, with laboratory practice, in any two of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. History. Same as for the Academic department, B. L. Course, page 42.

No student deficient in Mathematics will be allowed to enter the Engineering department.

**Courses:**

The three courses offered below lead respectively to the degrees of Bachelor of Science in Civil Engineering, and Bachelor of Science in Electrical Engineering, and Bachelor of Science in Mechanical Engineering. A special course of one year in Civil Engineering for surveyors leads to a Certificate.

During the vacation following the Junior year, Engineering students are required to visit, and to write a report, with necessary drawings, of some engineering enterprise in their respective lines of work.

A course in Civil Engineering, and courses in Mining Engineering and in Chemistry and Metallurgy, are given in the School of Mines and Metallurgy at Rolla, which is a department of the University. See pages 139-140.

For general statement as to buildings and equipment, see pages 15-17.

For information as to tuition charges, fees, etc., see page 22.

**Degrees:**

The degrees of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), will be conferred on candidates who, after receiving the first degree from this University or one of equivalent standing, have spent in the same course one year (at least ten hours a week) in graduate work in the University, or two years in professional practice and in graduate work *in absentia*.

The candidate must pass an examination on his graduate work and present a satisfactory thesis.

## Civil Engineering.

Professor CORY.

The instruction is given by means of lectures and recitations, supplemented by draughting, field and laboratory work. The field work embraces the modern methods of land, railroad and mining surveying, while laboratory work is provided in Chemistry, Geology, Physics, and Engineering. The course of instruction has been planned with a view to laying a substantial foundation for the general and technical knowledge needed by practical engineers.

There is a complete equipment of Transits, Compasses, Levels, Chains, Leveling-rods, Stadia rods, etc., and students have free access to museums and laboratories of all the other departments of the University.

### COURSE IN CIVIL ENGINEERING.

#### Freshman Year.

##### *First Semester.*

|  |   |
|--|---|
| Mathematics—Solid Geometry and Higher Algebra.....                 | 5 |
| English—Rhetoric, Composition and Literature.....                  | 3 |
| French or German—Grammar and Reader.....                           | 3 |
| Drawing—Free-hand shading, geometrical projections, lettering..... | 4 |
| Shop—Use of joiners' tools and wood-turning.....                   | 3 |

##### *Second Semester.*

|   |   |
|---|---|
| Mathematics—Trigonometry and Higher Algebra.....  | 5 |
| English—Rhetoric, Composition, and Literature.....  | 2 |
| French or German—Reading.....   | 3 |
| Descriptive Geometry—Orthographic projections, problems of points,<br>lines and planes. Representations of surfaces, tangencies and inter-<br>sections, perspective and isometric ..... | 4 |
| Drawing—Problems in Descriptive Geometry.....   | 2 |
| Shop—Pattern-making .....   | 2 |

#### Sophomore Year.

##### *First Semester.*

|  |   |
|--|---|
| Chemistry.....   | 4 |
| Drawing—Elements of machine drawing.....   | 2 |
| Surveying—Use of instruments, the theory and practice of Land Sur-<br>veying, Topography ..... | 4 |
| Physics .....  | 3 |
| Mathematics—Analytical Geometry.....   | 3 |
| Shop—Forging.....  | 2 |

*Second Semester.*

|  |   |
|--|---|
| Physics.....   | 5 |
| Drawing—Tinting, tracing, blue printing and topographical..... | 2 |
| Chemistry.....   | 4 |
| Mathematics—Calculus.....                                      | 3 |
| Shop—Forging.....  | 2 |
| Metallurgy.....  | 2 |

**Junior Year.***First Semester.*

|  |     |
|--|-----|
| Mechanics of Engineering.....  | 5   |
| Calculus.....  | 3   |
| Railroad Engineering—Economic theory of location, curves, field engineering, etc.....                                      | 5   |
| Steam Engineering—Types of engines and boilers, details of construction, indicator, valve gears and valve adjustments..... | 3   |
| Elective.....  | 0-2 |

*Second Semester.*

|   |     |
|---|-----|
| Mechanics of Engineering.....                                       | 3   |
| Calculus.....   | 3   |
| Framed structures—Analytical and graphical analysis.....            | 3   |
| Geology—Economic.....   | 3   |
| Engineering laboratory.....   | 2   |
| Surveying—Two weeks' field practice and one week's office work..... | 1   |
| Elective.....   | 0-3 |

*Vacation Work.*

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

**Senior Year.***First Semester.*

|   |     |
|---|-----|
| Astronomy—Practical Astronomy, with night observations..... | 5   |
| Masonry and Foundations.....                                | 3   |
| Bridge Engineering—Design and details.....                  | 3   |
| Machine Design.....   | 2   |
| Engineering laboratory.....                                 | 2   |
| Elective.....   | 0-3 |

*Second Semester.*

|  |     |
|--|-----|
| Geodesy and Least Squares—Figure of the earth, U. S. Coast and Geodetic Surveys, etc. .... | 3   |
| Hydraulic Engineering—Water collection and distribution, water-wheels, turbines.....       | 3   |
| Right and Oblique Arches—Stereotomy and stone-cutting.....                                 | 3   |
| City and Sanitary Engineering.....   | 3   |
| Engineering laboratory.....  | 2   |
| Geodetic Practice—Two weeks' field practice and one week's office work.                    | 1   |
| Elective .....   | 0-3 |

## COURSE IN SURVEYING.

A special course in Surveying is offered in addition to the regular four years' course. This is designed especially for those wishing to fit themselves for the position of County Surveyor or Government Land Surveyor. A certificate of proficiency is given to those who complete this course, which may be done in forty weeks. The requirements for entrance are the same as those required for the regular course, with a working knowledge of Trigonometry added.

For the Rollins scholarship, see page 26.

## Electrical Engineering.

Assistant Professor SHAW.

This course is designed to furnish training in the fundamental principles underlying all engineering practice, and in the theory and technical details of the most important branches of Electrical Engineering.

Instruction is given by means of recitations, lectures, and laboratory work.

Especial attention is paid to alternating current phenomena, as well as the theory, design, construction, installation, and testing of electrical machinery of all kinds.

The apparatus is new, from the best makers, and includes instruments for electrical measurements of precision, a storage battery conveniently arranged for testing, an electric light plant, various types and sizes of direct and alternating current dynamos and motors, measuring instruments, etc.

## COURSE IN ELECTRICAL ENGINEERING.

The Freshman and Sophomore years are identical with those of the Civil Engineering course (page 130).

**Junior Year.**

*First Semester.*

|  |     |
|--|-----|
| Mechanics of Engineering .....                         | 5   |
| Calculus.....  | 3   |
| Direct Current Dynamos—Theory, design and testing..... | 5   |
| Electrical measurements.....                           | 2   |
| Elective.....  | 0-3 |

*Second Semester.*

|  |     |
|--|-----|
| Mechanics of Engineering.....  | 3   |
| Calculus.....  | 3   |
| Direct Current Dynamos—Theory, design and testing.....   | 4   |
| Mathematical Electricity and Magnetism—Elementary theory of electro-<br>statics and electrodynamics..... | 3   |
| Electrical measurements.....   | 2   |
| Elective.....  | 0-3 |

*Vacation Work.*

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method or construction from personal examination and study. These reports are required to be handed in during the following term.

**Senior Year.**

*First Semester.*

|   |     |
|---|-----|
| Alternating Currents—Theory of; study, design and testing of alternate<br>current machinery.....                                | 4   |
| Steam Engineering—Types of engines and boilers, details of construc-<br>tion, indicator, valve-gears and valve adjustments..... | 3   |
| Machine Design .....  | 2   |
| Heat and Light.....   | 3   |
| Shop—Machine and vise work on metals.....   | 3   |
| Elective.....   | 0-3 |

*Second Semester.*

|  |     |
|--|-----|
| Alternating Currents—Theory of; study, design and testing of alternate<br>current machinery..... | 5   |
| Dynamo Design and Construction .....   | 5   |
| Steam Boilers.....   | 2   |
| Shop—Machine and vise work on metals.....  | 3   |
| Elective.....  | 0-3 |

## Mechanical Engineering.

Professor MARX.

The practical and theoretical training given is intended to prepare young men for responsible positions. The practical work familiarizes them with the use of machine and hand tools; the theoretical acquaints them with the principles underlying all machine construction. Students thus become familiar with the conditions and problems that confront all designers, and all managers of machine shops.

In the study of prime movers, special attention is given to turbines and other water motors, and to the steam engine.

In machine construction, the theory of mechanism is thoroughly studied. It embraces the study of gearing, screws, cranks, and levers, together with the design of machines and the materials used in their construction.

In mill-work are fully treated ventilation, heating, lighting, fire protection, and the arrangement of shafting, belting, and machinery in manufacturing establishments, practical problems involving strength of shafting, belting, gearing, and the electrical transmission of power.

In steam engineering, attention is given to chimneys, furnaces, boilers, and the setting of boilers with reference to proper combustion of fuel, to securing the greatest efficiency in the production of steam, and to proportioning parts for strength, durability and accessibility to facilitate repairs and cleaning. The care and management of boilers, engines and entire steam plants is an essential part of the study.

While pursuing the foregoing studies, the student is required to make plans, working drawings, and estimates.

In the laboratory, tests are made of engineering materials with regard to tension, crushing, elongation and shearing; engine and boiler trials, as to efficiency; calorimeter trials as to quality of steam; valve setting by aid of indicator. The erection, alignment and setting of engines are especially considered.

### COURSE IN MECHANICAL ENGINEERING.

The Freshman and Sophomore years are identical with those of the course in Civil Engineering, page 130.

#### **Junior Year.**

##### *First Semester.*

|  |   |
|--|---|
| Mechanics of Engineering—Statics, dynamics.....  | 5 |
| Steam Engineering—Elements of steam engineering; description of types of boilers; engines, details of construction, dimensions for given power plant, use and study of steam engine; indicator, valve gears and valve adjustments..... | 3 |



|  |     |
|--|-----|
| Mathematics—Calculus.....  | 3   |
| Kinematics—Principles of mechanism, rolling curves, teeth of wheels,<br>quick return motion, straight line motion..... | 2   |
| Applied Electricity.....   | 3   |
| Elective.....  | 0-2 |

*Second Semester.*

|   |     |
|---|-----|
| Mechanics of Engineering—Strength of material.....        | 3   |
| Applied Electricity.....                                  | 3   |
| Framed Structures—Analytical and graphical treatment..... | 3   |
| Mathematics—Calculus.....                                 | 3   |
| Kinematics—Valve and link motions.....                    | 2   |
| Boilers.....  | 2   |
| Elective.....   | 0-2 |

*Vacation Work.*

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method or construction from personal examination and study. These reports are required to be handed in during the following term.

**Senior Year.**

*First Semester.*

|   |     |
|---|-----|
| Steam Engines—Detail study of different types, design and construction.         | 3   |
| Mechanical drawing—Design of engine and boiler.....                             | 2   |
| Framed Structures—Iron roof and building; construction, design and detail ..... | 3   |
| Machine design.....   | 2   |
| Shop—Machine and vise work.....   | 3   |
| Heat and light.....   | 3   |
| Elective.....   | 0-2 |

*Second Semester.*

|  |     |
|--|-----|
| Thermodynamics of steam and other heat engines.....  | 2   |
| Mill Engineering—Mill and factory construction, ventilation, steam-heating, fire protection..... | 2   |
| Hydraulics and Hydraulic Motors—Water wheels, turbines and pumps...                              | 3   |
| Mechanical Drawing—Engine, details and estimates.....  | 3   |
| Mechanical Laboratory.....   | 2   |
| Shop—Machine and vise work.....  | 3   |
| Elective.....  | 0-3 |

The students in Mechanical Engineering have the use of full sets of working drawings of standard modern engines, a small but well-equipped technical library, Indicators, Planimeters, Calorimeters, Tachometers, Thermometers, Crosby Steam-gauge Tester, Injectors, Absorption and

Transmission Dynamometers, Engine models, etc. They have the advantage of the shops of the College of Agriculture and Mechanic Arts. In these shops they are trained in the use and care of wood and iron-working tools. The 12"×36" Corliss engine and five boilers (one down draft and four tubular return) are used for experiment work. They aggregate 600-horse power.

The students in Mechanical Engineering have the use of the Testing, Hydraulic and Cement laboratories of the Civil Engineering department, and the Electrical laboratory, in such branches as are required by the M. E. course.

For description of shops, see "School of Mechanic Arts," page 126.

## D. SCHOOL OF MINES AND METALLURGY

(AT ROLLA, MISSOURI.)

### EXECUTIVE COMMITTEE.

|                               |                              |
|-------------------------------|------------------------------|
| R. B. OLIVER, Chairman.....   | Jackson                      |
| M. E. BENTON.....             | Neosho                       |
| J. T. MOORE.....              | Lebanon                      |
| M. F. FAULKNER,<br>Secretary. | D. W. MALCOLM,<br>Treasurer. |

### FACULTY.

|  |  |
|--|--|
| RICHARD HENRY JESSE, LL. D.,<br><i>President.</i>                              |  |
| WALTER BUCK RICHARDS, M. A.,<br><i>Director, and Professor of Mathematics.</i> |  |
| ELMO GOLIGHTLY HARRIS, C. E.,<br><i>Professor of Engineering.</i>              |  |
| COURTNEY DEKALB,<br><i>Professor of Mining and Metallurgy.</i>                 |  |
| ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,<br><i>Professor of Physics.</i>       |  |
| EUGENE THOMAS ALLEN, A. B., Ph. D.,<br><i>Professor of Chemistry.</i>          |  |

PAUL JULIUS WILKINS, B. S.,

*Instructor in Academic Department, and Librarian.*

THOMAS LEWIS RUBEY, A. M.,

*Instructor in Academic Department, and Secretary of the Faculty.*

GEORGE EDWARD MILLER, B. S.,

*Instructor in Shop-work and Drawing.*

PAUL ARMSTRONG LARSH,

*Assistant in Chemical Laboratory.*

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## INTRODUCTORY STATEMENT.

### Organization :

In 1870, the General Assembly in accepting the donation by the general government of lands for educational purposes established an Agricultural College and a School of Mines and Metallurgy, "the leading object of these Colleges" being "to teach such branches as are related to agriculture and the mechanic arts and mining, including military tactics, and without excluding other scientific and classical studies, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." (R. S. 1889, Sec. 8739.) The statutes fix the status of the School of Mines as a College of the State University. Its affairs are under the immediate supervision of an Executive Committee, consisting of three members of the Board of Curators of the University.

### Location :

The School is located at Rolla, the county seat of Phelps county, on the St. Louis & San Francisco railroad, about midway between St. Louis and Springfield. Rolla is a town of about 2000 inhabitants; it has an altitude of 1140 feet above sea level, and enjoys an agreeable and notably healthful climate.

### Requirements for Admission:

1. English. Grammar and Composition: Rules of syntax; analysis of sentences; correction of ungrammatical expressions. An essay upon one of several topics assigned will be required, and this will be graded with respect to spelling, punctuation, use of capitals, grammatical correctness, and thought.

2. Elementary Algebra as far as Quadratics. Use of signs, factoring, highest common factor, lowest common multiple. Fractions, simple equations, square root, and cubic root.

3. Elementary Physics. Properties of matter, laws of motion, mechanics of fluids, heat.

In 1898 it is expected to require three books of Plane Geometry.

#### **Courses:**

The School of Mines offers three professional courses:

I. MINING ENGINEERING.

II. CIVIL ENGINEERING.\*

III. CHEMISTRY AND METALLURGY.

Course I is a general course in Mining Engineering, suited to fit a man for the conduct of mining operations in all their variety, from the prospecting for the mine through its working and the treatment of its ores to the delivery of the finished product on the market.

Course II is a course in Engineering as applied to railways, highways and municipal works.

Course III is a course in which some of the higher Mathematics and Engineering of Course I are replaced by more detailed work in Chemistry and Metallurgy. It has in view especially processes subsequent to the delivery of the ore above the ground, and fits a man to work as assayer and chemist, or in other connection, with concentrating plants and smelters. In the Senior year an option is allowed the student, as he may prefer to specialize more upon the metallurgical or upon the chemical side.

#### **Degrees:**

For the completion of any of these courses the degree of Bachelor of Science (B. S.) is given. The further degree of Engineer of Mines (E. M.), Civil Engineer (C. E.), or Metallurgical Engineer (Met. E.), may be given either for an additional year's work in residence, selected with the approval of the Faculty from the graduate courses; or may be conferred on one who, since his graduation as B. S., has had experience in the actual practice of his profession, of such duration and value as in the judgment of the Faculty to warrant its bestowal.

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\*A course in Civil Engineering is taught at Columbia, also. See page 130.

## SCHEME OF STUDIES.

In the scheme below, a brief outline of the courses is given, with the number of exercises a week in each subject. To each lecture and recitation an hour is allowed, while exercises in laboratories, drawing-room or field take from two to four hours each.

## FRESHMAN AND SOPHOMORE YEARS (ALL COURSES).

| FRESHMAN YEAR.            |   |   |   | SOPHOMORE YEAR.             |   |   |   |
|---------------------------|---|---|---|-----------------------------|---|---|---|
| <i>Terms</i> .....        | 1 | 2 | 3 | <i>Terms</i> .....          | 1 | 2 | 3 |
| Geometry .....            | 5 | 5 | . | Analytic Geometry .....     | 5 | 2 | . |
| Higher Algebra .....      | 5 | . | . | Descriptive Geometry .....  | . | 5 | . |
| Trigonometry .....        | . | 5 | 5 | Inorganic Chemistry .....   | 4 | . | . |
| Chemistry .....           | 4 | . | . | Applied Chemistry .....     | 5 | . | . |
| English .....             | . | 5 | 5 | Differential Calculus ..... | . | . | 5 |
| Physics .....             | . | . | 5 | French or German .....      | 3 | 3 | 5 |
|                           |   |   |   | Advanced Physics .....      | . | . | 5 |
| Drawing.....              | 2 | 2 | 2 | Surveying.....              | 3 | . | . |
| Shop-work .....           | 2 | 2 | 2 |                             |   |   |   |
| Chemical Laboratory ..... | 1 | 1 | 1 | Drawing.....                | . | 2 | . |
|                           |   |   |   | Chemical Laboratory.....    | 2 | 3 | 4 |
|                           |   |   |   | Field Practice.....         | 3 | . | 1 |

In the Course in Chemistry and Metallurgy some equivalent may be substituted for Surveying, and German is required.

## JUNIOR YEAR.

| MINING ENGINEERING. |   |   |   | CIVIL ENGINEERING.                |   |   |   | CHEMISTRY AND METALLURGY. |   |   |   |
|---------------------|---|---|---|-----------------------------------|---|---|---|---------------------------|---|---|---|
| <i>Terms</i> .....  | 1 | 2 | 3 | <i>Terms</i> .....                | 1 | 2 | 3 | <i>Terms</i> .....        | 1 | 2 | 3 |
| Physics.....        | 5 | 2 | . | Physics.....                      | 5 | 2 | . | Physics.....              | 5 | 2 | . |
| Integral Calculus   | 3 | . | . | Integral Calculus                 | 3 | . | . | Integral Calculus         | 3 | . | . |
| Mechanics.....      | . | . | 5 | Mechanics.....                    | . | . | 5 | Theoretical Chem          | . | 5 | 5 |
| Masonry Constr..    | . | 3 | . | Masonry Constr..                  | . | 3 | . | Stereotomy .....          | . | . | 1 |
| Stereotomy.....     | . | . | 1 | Stereotomy.....                   | . | . | 1 | German .....              | 5 | . | . |
| French or Ger....   | 5 | . | . | French or Ger....                 | 5 | . | . |                           |   |   |   |
| Mining .....        | . | 3 | 5 | Lines of Commu-<br>nication ..... | . | . | 5 | Organic Chem....          | . | . | 4 |
| Metallurgy .....    | . | . | 4 | Metallurgy.....                   | . | . | 4 | Metallurgy .....          | . | . | 4 |
| Ore Dressing .....  | . | 4 | . | Elective .....                    | . | 5 | . | Ore Dressing .....        | . | 4 | . |
| Mineralogy .....    | 2 | 2 | . | Mineralogy.....                   | . | 2 | . | Mineralogy.....           | 2 | 2 | . |
|                     |   |   |   |                                   |   |   |   | Chemical Lab....          | 2 | 3 | 2 |
| Chemical Lab....    | 3 | 3 | . | Physical Lab....                  | 2 | 2 | 2 | Physical Lab....          | 2 | 2 | 2 |
| Physical Lab....    | 2 | 2 | 2 | Drawing, Field<br>Practice .....  | 3 | 3 | 3 | Drawing.....              | . | . | 1 |
| Drawing.....        | . | . | 2 |                                   |   |   |   | Ore Dressing.....         | 1 | . | 1 |
| Ore Dressing.....   | 1 | . | 1 |                                   |   |   |   |                           |   |   |   |

## SENIOR YEAR.

| MINING ENGINEERING.                        |          |          |          | CIVIL ENGINEERING.                         |          |          |          | CHEMISTRY AND METALLURGY. |          |          |          |
|--|----------|----------|----------|--|----------|----------|----------|---------------------------|----------|----------|----------|
| <i>Terms.....</i>                          | <i>1</i> | <i>2</i> | <i>3</i> | <i>Terms.....</i>                          | <i>1</i> | <i>2</i> | <i>3</i> | <i>Terms.....</i>         | <i>1</i> | <i>2</i> | <i>3</i> |
| Geology.....                               | 5        | .        | 3        | Geology.....                               | 5        | .        | 3        | Geology.....              | 5        | .        | 3        |
| Electr. Transm....                         | .        | 5        | 1        | Electr. Transm....                         | .        | 5        | 1        | Electro-Metall...         | .        | 4        | .        |
| Metallurgy.....                            | 5        | 5        | .        | Bridge and Sanitary Engin.....             | .        | .        | 3        | Metallurgy.....           | 5        | 5        | .        |
| Hydraulics.....                            | .        | 5        | .        | Framed Structures.....                     | .        | 5        | .        | Masonry Constr..          | .        | 3        | .        |
| Framed Structures.....                     | 5        | .        | .        | Steam Engine and Power Trans- mission..... | .        | .        | 3        | Thermodynamics.....       | 2        | .        | .        |
| Steam Engine and Power Trans- mission..... | .        | .        | 3        | Astronomy.....                             | 3        | .        | .        | Metall. Problems.....     | .        | .        | 2        |
| Elective.....                              | .        | .        | 3        | Elective.....                              | .        | 3        | .        | Organic Chem....          | 3        | 2        | .        |
| Physical Lab.....                          | .        | 2        | .        | Physical Lab.....                          | .        | 3        | .        | Elective.....             | .        | .        | 5        |
| Designing.....                             | 3        | 2        | .        | Drawing and Field Practice..               | 5        | 2        | .        | Physical Lab.....         | .        | 3        | .        |
| Metall. Lab.....                           | 1        | .        | 1        | Thesis.....                                | .        | .        | 5        | Designing.....            | 3        | .        | .        |
| Thesis.....                                | .        | .        | 5        |  |          |          |          | Chemical Lab....          | 1        | 2        | .        |
|  |          |          |          |  |          |          |          | Metall. Lab.....          | 1        | .        | 1        |
|  |          |          |          |  |          |          |          | Thesis.....               | .        | .        | 5        |

## SPECIAL COURSES.

For the benefit of those who may lack the time, the money or the inclination to spend four years in preparation for professional work, certain special courses, designed to confer competent knowledge of particular departments of engineering work, are offered. These are:

## I. ASSAYING AND TECHNICAL ANALYSIS.

This includes General Chemistry, Inorganic Chemistry, Qualitative Analysis, Applied Chemistry, and a year's work in Assaying and Quantitative Analysis. It will require from a year and a half to two year's, according to the preparation and diligence of the student.

## II. SURVEYING.

The purpose of this course is to turn out competent Land and Mine Surveyors and draughtsmen. The essentials of it are a thorough knowledge of Algebra, Geometry, Trigonometry, Surveying, Descriptive Geometry and Stereotomy, with field Practice and Drawing. It may be completed in one year or in two years, according to the advancement of the applicant upon entrance. By combining with this the courses in Mineralogy, Geology, Mining and Ore-dressing, industrious students, especially such as have had some practical experience, may in two years attain considerable competency for the conduct of mining operations.



## III. ELECTRICITY.

A knowledge of the theory of Electricity and some acquaintance with its manifold applications in the arts is in these days of prime importance to every engineer—especially to the mining engineer, whose duties are so varied. Hence, in the regular courses this subject receives a liberal share of attention. This special course includes the shop work, Chemistry through the Sophomore year, Mathematics through the Calculus, and all the Physics of the regular course in Mining Engineering, and in addition the study of Electricity and Magnetism (Silvanus Thompson), and Practical Electricity (Slisgo & Brooker), for three hours a week for one year, with accompanying Laboratory work.

For the satisfactory completion of any of the special courses a Certificate of Proficiency in the course pursued is granted.

## GRADUATE COURSES.

As mentioned on page 139, an opportunity is offered for Bachelors of Science to obtain the Engineer's degree by a year's graduate work in residence, the character and content of this work to be arranged between the applicant and the Faculty.

Those who elect work in Mathematics as part of their assignment may make a wider study of Conic Sections by both Algebraic and Projective methods (Salmon, Cremona), may take Advanced Calculus (Williamson), Theory of Equations (Burnside and Panton), Determinants (Muir or Weld). Or, if they desire to pursue subjects more directly related to the physical sciences, they may take Dynamics (Williamson), Quaternions (Kelland and Tait), Differential Equations (Johnson).

In Physics courses are opened in the Mathematical Theory of Electricity and Magnetism, and in the Theory of alternating Currents.

In Engineering, Chemistry and Mining and Metallurgy, advanced work, both theoretical and practical, will be offered, the precise nature of it in each case to be fixed between student and Professor in view of the former's purpose.

## ACADEMIC COURSE.

In compliance with an act of the General Assembly of 1885 an Academic course is maintained, in which is embraced that fundamental general education which should in part precede and in part accompany the pursuit of specific technical knowledge. The table that follows gives the studies, and the number of hours required in each, in the three years of the Academic course.

## SCHEME OF ACADEMIC STUDIES.

| FIRST YEAR.       |          |          |          | SECOND YEAR.      |          |          |          | THIRD YEAR.        |          |          |          |
|-------------------|----------|----------|----------|-------------------|----------|----------|----------|--------------------|----------|----------|----------|
| <i>Terms.....</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>Terms.....</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>Terms.....</i>  | <i>1</i> | <i>2</i> | <i>3</i> |
| Elementary Alg .  | 5        | 5        | 5        | Geometry .....    | 5        | 5        | .        | Higher Algebra ..  | 5        | 5        | .        |
| English I.....    | 5        | 5        | 5        | German .....      | 3        | 3        | 5        | Trigonometry....   | .        | .        | 5        |
| General History.  | 5        | 5        | 5        | English Lit.....  | .        | 5        | 5        | German .....       | 5        | .        | .        |
| Physiology.....   | 5        | .        | .        | Physics .....     | .        | .        | 5        | El. of Psychology. | .        | .        | 3        |
| Physical Geog.... | .        | 5        | 5        | Psychology.....   | .        | .        | 5        | Political Econ.... | 5        | .        | 5        |
|                   |          |          |          | English History . | 5        | 3        | .        | General Chem....   | 4        | .        | .        |
|                   |          |          |          | Zoology.....      | 5        | .        | .        | Logic.....         | .        | 5        | .        |
|                   |          |          |          |                   |          |          |          | Book-keeping       |          |          |          |
|                   |          |          |          |                   |          |          |          | (optional).....    | .        | .        | 3        |
|                   |          |          |          |                   |          |          |          | Civil Government   | .        | .        | 5        |
|                   |          |          |          |                   |          |          |          | Gen'l Chem. Lab.   | 1        | 1        | 1        |
|                   |          |          |          |                   |          |          |          | Elective.....      | .        | 5        | 5        |

*E. THE AGRICULTURAL EXPERIMENT STATION.*

This station was established by the act of Congress of 1887, and by the acts of the General Assembly of Missouri accepting its provisions. By the order of the Board of Curators of the University of the State of Missouri it is made a Department of the College of Agriculture.

The following are the essential sections of the act of Congress referred to, and define clearly the objects to be accomplished in the organization of these stations:

*Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled,* That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and application of agricultural science, there shall be established, under direction of the college or colleges or agricultural department of colleges in each state or territory, established, or which may hereafter be established, in accordance with the provisions of an act approved July second, eighteen hundred and sixty-two, entitled "An act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," or any of the supplements to said act, a department to be known and designated as an "Agricultural Experiment Station."

SEC. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different

stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analyses of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories.

SEC. 3. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the states or territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster-General may from time to time prescribe.

It will be noted that the act of Congress of 1862 was designed to promote *Agricultural education*, while that of 1887 provides for *Agricultural investigation*.

The Station uses such parts of the College farm and equipment as are needed for experiments.

The results of experiments are given to the public in a series of bulletins, which are furnished free of charge to any one applying for the same. These bulletins are numbered from 1 to 35 of the Farm series, and from 1 to 38 of the Station series, since its organization in 1888.

During the year seven Bulletins and an Annual Report were published, aggregating 240 pages, reporting the results of careful scientific experiments in the best methods of corn and potato growing, manures and fertilizers, insects injurious to fruit, Texas Fever, and the effect of the width of the tire on the draft of wagons.

Ten thousand copies of each were distributed free to the newspapers of the State and to the agricultural press, the libraries of colleges and high schools of the State, and to the leading farmers of this and adjoining states. In addition to the regular Bulletins of the Experiment Station, numerous Circulars of Information and Special Newspaper Bulletins have been published.

The experimental work has been greatly expanded and made more exact and scientific, keeping constantly in view, however, its practical and economic phases.

In agriculture investigations are now under way covering questions of maintenance of soil fertility; the renovation of worn-out soils; the most efficacious rotation of crops; comparison of green manure crops, forage crops, varieties of grains, grasses, potatoes, etc.; best methods of tillage for corn; effect of subsoiling and tile drainage; feeding experiments designed to ascertain the cheapest foods for pork and beef productions, and the cheapest method of wintering cattle.

In Horticulture about 400 named varieties of apples, 108 of plums, 120 of grapes, 28 of peaches, 10 of pears, 160 of strawberries and other fruits, are growing and being tested upon the Horticultural grounds. In addition, several hundred varieties of seedling strawberries, one-half of them the result of careful cross breeding of known parents, have been originated and are given promise of good results on the grounds. During the past year, seeds of hand-pollinated peaches and plums, and selected seeds and plants of promising types of native nuts, persimmons, papaws and other wild fruits have been planted. A collection of figs, Japanese persimmons and other foreign fruits and nuts, has been secured. The work of plant breeding will be continued with a view of obtaining varieties better adapted to our climatic conditions. The leading varieties of vegetables are tested as they come on the market.

Experiments in spraying with various mixtures for fungous diseases are carried on in a number of private orchards as well as on the Horticultural grounds. Experiments in pruning and grafting are in progress in the new orchards and in the vineyard. The various orchard trees and vines are observed for their pollinating characteristics and to see whether self or cross fertilization occurs in each variety. Methods of protecting tender buds are being tried. An experiment in breeding tomatoes is in progress.

The Entomological Department is conducting extensive experiments in the best methods of suppressing insects injurious to farm, garden, and orchard crops.

Extensive experiments with Texas Fever have been carried on by the Station in co-operation with the Missouri State Board of Agriculture and the Texas Experiment Station.

For further information concerning the College of Agriculture or the Experiment Station, address

H. J. WATERS,

Dean and Director,

Columbia, Mo.

*OFFICERS OF THE EXPERIMENT STATION.*

## BOARD OF CONTROL:

The Curators of the University of the State of Missouri.

## ADVISORY COUNCIL:

The State Board of Agriculture.

## STATION STAFF.

|                                      |   |
|--------------------------------------|---|
| THE PRESIDENT OF THE UNIVERSITY..... |   |
| H. J. WATERS, B. S. A.....           | Director                                  |
| PAUL SCHWEITZER, Ph. D.....          | Chemist                                   |
| J. C. WHITTEN, B. S.....             | Horticulturist                            |
| J. M. STEDMAN, B. S.....             | Entomologist                              |
| J. W. CONNAWAY, M. D. C.....         | Veterinarian                              |
| C. M. CONNER, B. S.....              | Assistant in Agriculture                  |
| D. W. MAY, M. Agr.....               | Assistant in Agriculture                  |
| N. O. BOOTH, B. Agr.....             | Assistant in Horticulture                 |
| C. H. THOMPSON, B. S.....            | Assistant in Botany                       |
| *A. E. HACKETT.....                  | Section Director Missouri Weather Service |
| IRVIN SWITZLER.....                  | Secretary                                 |
| R. B. PRICE.....                     | Treasurer                                 |
| C. L. WILLOUGHBY.....                | Clerk and Stenographer                    |

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\*In the service of the State Board of Agriculture.

## VII. Graduate Department.

### I. ACADEMIC DEPARTMENT.

#### Admission:

Graduates of either sex of this and of other reputable Colleges and Universities, and (in exceptional cases, by special permission of the Faculty) other persons of liberal education, are received as students.

#### Teaching Fellowships:

Teaching Fellowships are annually established where such additional teaching force is required. Holders of these fellowships are required to teach five or six hours a week, and receive therefor \$200; and they are exempt from the payment of all fees and deposits. For further details, see page 27.

During the year 1896-97, fellowships were held in Latin, German, French, and Mathematics.

#### Graduate Club:

A club has been organized by the graduate students for the purpose of furthering their social and scholastic interests in the University and of bringing themselves into touch with graduate student life elsewhere. This club has joined the Federation of Graduate Clubs of the leading American Universities.

#### Degrees:

1. *The Master's Degree*.—Application for the Master's Degree in Arts, Letters or Science will be considered on the basis of one year's graduate study in the University. This year's study is understood to mean for teaching fellows at least eight (8) hours a week, for other students at least ten (10) hours a week throughout the scholastic year, or the full equivalent of such study. All courses may be taken from one general subject; at least half must be.

The majority of the courses must be from those offered for graduate students. No course open to undergraduates below the Junior year shall be counted for this degree.

A creditable thesis evincing capacity for original research and power of independent thought, in the line of the student's previous work, shall be submitted on or before May 1 of the given year.

The subject of the thesis and the courses chosen shall be laid before the Committee on Graduate Degrees on or before November 1 of each year.



At the close of the scholastic year the University Council may, on the report of this Committee, recommend to the Board of Curators for this degree such candidates as have satisfactorily fulfilled these conditions.

2. *The Doctor's Degree.*—For the attainment of the Doctorate no definite course is prescribed and no period of time is specified; but in general the candidate will be expected to spend at least three years, or if he have a Master's Degree, at least two years, in graduate study under University direction; but with the consent of the Faculty, one of these years may in either case be spent *in absentia*.

The candidate must have a Bachelor's degree in Arts, Letters, Science, or Philosophy, from some reputable University or College, and must attain in graduate study at this University a high proficiency in one branch of learning, and a respectable proficiency in at least one other. He must submit a dissertation embodying the results of original investigation, and must pass examination in his major and minor subjects.

Candidates who have satisfactorily met these conditions may be recommended for the Doctor's degree in the manner prescribed above for candidates for the Master's degree.

#### \*COURSES OF INSTRUCTION.

##### ASTRONOMY.

Professor Updegraff:

Theoretical Astronomy. Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*

##### CLASSICAL ARCHEOLOGY.

Professor Pickard:

1. Topography and Monuments of Athens. *Two hours a week.* Jahn's "Pausaniæ Descriptio Arcis Athenarum," and Schubart's text of Pausanias will be studied and interpreted in the light of the most recent excavations and publications. The disputed points of Athenian topography will be discussed, and the attempt will be made, with the aid of plans and photographs, to obtain as clear ideas as possible of both ancient and modern Athens.

2. Archæological Seminary. *Two hours a week.* A study of the description, explanation, and interpretation of works of Greek Art will be made. Both sculpture and vase paintings will be discussed, and important points in the history of Greek Art and Greek artists will be considered.

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\*Other courses of study offered among the Academic Studies (pages 57-74) are accepted as graduate in rank. For details, see announcements there.

## ENGLISH.

Assistant Professor Penn:

1. Gothic and Old Saxon. *Three hours a week.* An introduction to Germanic philology, with special reference to English. The first semester is given to Gothic, the second to Old Saxon. Grammatical forms, phonology, and morphology of these languages are studied; the accompanying lectures discuss the characteristics of the Germanic dialects—Vowel correspondences, the first and second shiftings of consonants, the ablaut series, and the general laws of language development.

Professor Allen:

2. Beowulf. *Two hours a week.* This course includes: Translation of the poem, with criticism of the text, proposed readings, etc.; study of the grammar of Anglo-Saxon in its relation to precedent and subsequent stages of the language; Anglo-Saxon versification, etc. Questions of mythology, geography, early Germanic life, the genesis of poem, etc., are assigned for special study.

## GEOLOGY.

Emeritus Professor Broadhead:

Course in Paleontology. Twice a week. (1) Fossils, their use, mineral composition, study of species and drawing of specimens. (2) Comparison of species. Geological History of certain organisms. Rise, culmination and decline of species. Varietal changes in different periods. Geologic and Geographic distribution of species. Why certain species are more abundant than others in certain strata.

Mr. Marbut:

Petrography. A course in rock Histology. Lectures and microscopic study of thin sections of rocks in the laboratory. *Three times a week.*

Open to students who have had courses 1, 4 and 5 (In Undergraduate Studies, page 71).

## GERMANIC LANGUAGES.

Professor Hoffman:

1. Middle High German is offered in the *First semester*. Grammar; reading from Wolfram von Eschenbach: "Gahmuret und Herzeloide," "Parzival's Jugend und Eintritt ins Leben"—translation into good modern High German, noting changes in construction, phraseology, and meaning of words; with lectures on the literature of the period. *Three hours a week.*

2. German Literature of the Eighteenth and Nineteenth Centuries. This course continues through the first and second semesters. *Three hours a week.*

3. A course in Old High German is offered in the second semester: Braune's Grammatik & Lesebuch; reading various fragments, and a portion from Tatian Otfried, Notker & Williram's Lied; philological study in connection with it. *Three hours a week.*

## GREEK.

Professor Manly:

(a) Seminary for advanced study. Minute study of one play of Euripides with private readings in Aeschylus and Sophocles.

Students desiring to take this work should give previous notice so that the necessary books may be had for them in time.

## HISTORY AND POLITICAL ECONOMY.

Professor Hicks:

4a. Studies in Recent European Literature in Economics and Finance. First semester, *two hours a week*.

6. Seminarium in Political Science. *Two hours a week*.

Acting Professor Loeb:

6. Seminarium in History. *Two hours a week*.

## LATIN.

Professor Jones:

1. History of the Latin Language. *Twice a week, both semesters*. This course embraces a historical study of the sounds, inflections and syntax of Latin. It is taught wholly by lectures, but requires much collateral reading.

2. The Latin Seminary. The Latin Seminary is primarily intended for those students who expect to engage in teaching. It is composed of the Professor of Latin and such graduate students as are prepared to do the work. The work consists in the critical study of some author with reports, reviews and interpretations of select passages by the class. In 1897-8 Virgil will be studied. Three meetings a week will be held.

Assistant Professor Burnam:

1. Latin Paleography. *Twice a week throughout the year*. This course includes an account of books, their makers and materials in antiquity and the Middle Ages, and abundant practice in reading facsimiles of manuscripts.

2. Roman Public Law. *Three hours a week throughout the year*. This course is open only to students who have taken Undergraduate Course 10, with which it alternates. It will not be given in 1897-8.

## MATHEMATICS.

Professor Tindall and Assistant Professor Defoe:

1. Differential Equations. The text used will be Johnson's Treatise on Differential Equations, with frequent reference to the admirable work of Forsyth. The treatment will embrace Ordinary Differential Equations of the first and second orders, Linear Equations with Constant and then with Variable Coefficients, Solutions in Series, Hypergeometric Series, the Solution of Riccati's, of Bessel's, and of Legendre's Equations.

2. Modern Higher Algebra. The text used will be Cours D'Algebre Superieure by Serret, with Salmon's Higher Algebra for reference. The subjects treated will be General Properties of Algebraic Equations, beginning with the treatment of the Complex Variable; Elimination, Symmetric Functions of the Roots, Resultants and Discriminants, Linear Transformation.

3. Higher Plane Curves. The text used will be Salmon's Geometrie Analytique, with frequent reference to the great work of Clebsch. The subjects treated will be Homogeneous Coordinates, General Properties of Plane Curves, Envelopes, Curves of the Third Order, Curves of the Fourth Order, Unicursal Curves.

4. Theory of Functions. This work will consist to a great extent of a course of lectures founded upon Klein's Functionentheorie, supplemented by work in Picard's Traite D'Analyse. The subjects will be a detailed treatment of the Complex Variable with its geometrical representation, Cauchy's Theorems, Singular Points of Functions, Surfaces of Riemann, study of Algebraic Functions and their Integrals. He has also paid much attention to the study of the Theory of the Potential. His associated work has been in Higher Plane Curves, using chiefly Clebsch; and in Higher Algebra, using Salmon and Serret.

5. The Theory of the Potential. The texts used will be Peirce's Potential Function and Duhem's Mathematical Treatment of Electricite et Magnetisme. The subjects treated will be Attraction, Theorem of Green, Lemmas of Gauss, Properties of the Potential, Surface Integrals, Electrical Distribution and the Solutions of the Problem of Dirichlet.

#### PHILOSOPHY.

Professor Thilly:

Modern Criticism. A study of the development of the critical problem in modern philosophy from the empirical side. Especial attention will be paid to Locke's Essay concerning Human Understanding; Berkeley's Principles of Human Knowledge, Hume's Treatise on Human Nature, and Kant's Criticism of Pure Reason. This course is open only to such students as have taken courses (1), (2), (3), and (4), described on page 65, and possess a good reading knowledge of French and German. *Three times a week for two semesters.*

#### PHYSICS.

Professor Lipscomb:

(a) Laboratory. Advanced Measurements and Special Investigations. Open only to those who have had Undergraduate Courses 4, 7a, 7b, 8a and 8b, or an equivalent amount of work. *Three to five times a week.* See page 69.

#### ROMANCE LANGUAGES.

Professor Weeks:

(1) Old French. Constan's *Chrestomathie*, with lectures. *M. F., at 10:30.* This course is open to Graduates properly qualified, and to any Senior who

has made a specialty of Romance Languages to the extent of having completed with high credit Undergraduate Courses 1, 2, 3 and 4, page 62. The epic poem, *Atiscans*, will be read, with close attention to the elements that enter into the poem, the object being to present to the student a practical illustration of text criticism.

(2b) Phonetics. A General Introduction to Philology. *W. F.*, at 4. This course is one of general interest to students of Philology. The work consists of two parts: historical and practical. The practical work includes an effort to get at the production of speech-sounds from the physiological stand-point. Such works as Grandgent's *English and German Sounds* (Ginn & Co.) are used. Numerous tracings showing the action of the organs of speech are discussed.

## II. COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

### SCHOOL OF AGRICULTURE.

For the degree of M. Agr., graduates of the College with the degree B. Agr. are required to take the Two Years' graduate course announced on page 111. The details of this course are arranged to suit the previous training of the candidates.

### SCHOOL OF ENGINEERING.

Graduate work in Civil, Electrical, and Mechanical Engineering is offered at Columbia to those who have finished the undergraduate courses in these subjects with the degree of Bachelor of Science. Students that entering under these conditions have completed a year of Graduate work and passed satisfactory examinations thereon, and presented a thesis of real merit, will receive, according to the course in which they have studied, the degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), or Mechanical Engineer (M. E.)

See page 129.

## III. DEPARTMENT OF LAW.

(a) One year of advanced work leading to the degree of LL. M.

This course is open to graduates of the Law department and of other law schools who have completed an equivalent course of study.

The object of the course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures, recitations and independent investigation on the following subjects:

Constitutional Law, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence.

The student is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students such instruction.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Lewin on Trusts; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations.

See page 84.



# LIST OF STUDENTS.

## Academic Department.

| Name.                                  | Course. | Postoffice.          | County.         |
|--|---------|----------------------|-----------------|
| <i>GRADUATES.</i>                      |         |                      |                 |
| Barnett, Mary Jessie, A. B. ....       |         | Columbia.....        | Boone .....     |
| Beasley, Geo. Hamilton, B. S. ....     |         | " .....              | " .....         |
| Brandon, Edgar Ewing, A. B. ....       |         | Marshall.....        | Saline .....    |
| Cauthorn, Edw. Beauford, C. E. ....    |         | Columbia.....        | Boone .....     |
| Christian, George Milton, A. M. ....   |         | Ashland .....        | " .....         |
| Conley, Wm. Thompson, B. S. ....       |         | Columbia.....        | " .....         |
| Daniels, Francis Potter, A. B. ....    |         | Ionia, Mich. ....    | " .....         |
| Gray, Louis Napoleon, B. L. ....       |         | Olean .....          | Moniteau.....   |
| Harris, Herman Fermain, A. B. ....     |         | Columbia.....        | Boone .....     |
| Hatton, John Harvey, A. B. ....        |         | Farmington, Ia. .... | " .....         |
| Herrnleben, Henry.....                 |         | Jamestown.....       | Moniteau.....   |
| Loeb, Clarence, A. B. ....             |         | Columbia.....        | Boone .....     |
| Mason, Elliott Jeffries, B. S. ....    |         | " .....              | " .....         |
| Riggs, Inez L., B. L. ....             |         | Farmer .....         | Pike .....      |
| Scott, John William, A. B. ....        |         | Canton.....          | Lewis .....     |
| Tindall, Mrs. Lula Gentry, B. L. ....  |         | Columbia.....        | Boone .....     |
| Turner, Ed., B. S., B. L., LL. B. .... |         | Wellsville .....     | Montgomery..... |

—17

## *UNDERGRADUATES.*

### SENIOR CLASS.

|                                  |       |                   |                  |
|----------------------------------|-------|-------------------|------------------|
| Alexander, William Campbell..... | B. L. | St. Charles.....  | St. Charles..... |
| Barth, Irvin Victor.....         | A. B. | Columbia.....     | Boone.....       |
| Cochel, Wilber Andrew.....       | "     | " .....           | " .....          |
| Conran, James Francis.....       | B. L. | High Hill.....    | Montgomery ..... |
| Dowdall, Guy Grigsby.....        | "     | Quincy, Ill. .... | " .....          |
| Edwards, Granville Dennis.....   | A. B. | Hamilton.....     | Caldwell.....    |
| English, George Harrison, Jr.... | "     | Kansas City.....  | Jackson .....    |
| Fast, Judson Cooper.....         | B. L. | Sedalia.....      | Pettis.....      |
| Hatton, Claudia May.....         | B. S. | Columbia.....     | Boone .....      |
| Hitch, Arthur Martin.....        | A. B. | Cuba.....         | Crawford .....   |
| Hunker, George Henry.....        | B. S. | Roanoke .....     | Randolph.....    |
| McAlester, Andrew Walker.....    | B. L. | Columbia.....     | Boone .....      |
| McGaugh, Elmer T.....            | "     | Richmond .....    | Ray .....        |
| McIntyre, Joe Shelby.....        | "     | Mexico.....       | Audrain .....    |
| Munday, Bert.....                | B. S. | Canton.....       | Lewis.....       |
| Myer, Max Washington.....        | A. B. | Salisbury.....    | Chariton.....    |
| Newman, Thomas Jefferson.....    | B. L. | Mt. Vernon.....   | Lawrence.....    |
| Organ, Minnie Katherine.....     | "     | Salem .....       | Dent .....       |
| Price, Charles Sterling.....     | "     | Columbia.....     | Boone .....      |
| Pringle, Edward Graves.....      | A. B. | Foristell.....    | St. Charles..... |
| Rippee, John Dennis.....         | "     | Lawson .....      | Ray .....        |
| Rogers, Lalla Rookh.....         | B. L. | Kingston.....     | Caldwell .....   |
| Sears, Eleanor Phidelia.....     | B. S. | Barnett .....     | Morgan .....     |
| Smith, Hugh Allison.....         | B. L. | Coale .....       | Henry.....       |
| Strong, Charles Monroe.....      | "     | Stotesbury.....   | Vernon .....     |
| Swearengen, Ethel Barton.....    | A. B. | Nevada.....       | " .....          |
| Turner, Charles William.....     | B. L. | Hale.....         | Carroll.....     |

| Name.                         | Course. | Postoffice.   | County.     |
|-------------------------------|---------|---------------|-------------|
| Weatherby, Everett Pine.....  | A. B.   | Columbia..... | Boone.....  |
| Weatherby, James Edward.....  | B. S.   | ".....        | ".....      |
| White, James Paul.....        | A. B.   | ".....        | ".....      |
| Wilkerson George Rappeen..... | B. L.   | Sedalia.....  | Pettis..... |
| Zwick, Galins Lawton.....     | "       | Bucklin.....  | Linn.....   |

-32

## JUNIOR CLASS.

|                                   |       |                     |                     |
|-----------------------------------|-------|---------------------|---------------------|
| Adams, George Paul.....           | B. L. | King City.....      | Gentry.....         |
| Alexander, Susan.....             | "     | Kingston.....       | Caldwell.....       |
| Ammerman, Gertrude.....           | A. B. | Columbia.....       | Boone.....          |
| Banks, John Samuel.....           | B. L. | ".....              | ".....              |
| Barnes, Charles Merline.....      | "     | New Madrid.....     | New Madrid.....     |
| Bennett, William Hall.....        | A. B. | Mound City.....     | Holt.....           |
| Blackwell, Laura Craig.....       | "     | Columbia.....       | Boone.....          |
| Blair, Jessie.....                | B. L. | Sedalia.....        | Pettis.....         |
| Botts, Lena Chattaui.....         | "     | Columbia.....       | Boone.....          |
| Bush, Aubrey Charles.....         | "     | ".....              | ".....              |
| Cannell, Edward.....              | B. S. | Hatton.....         | Callaway.....       |
| Carroll, Stephen Samuel.....      | A. B. | Columbia.....       | Boone.....          |
| Cash, William Shotwell.....       | B. L. | Ashley.....         | Pike.....           |
| Conley, Dudley Steele.....        | "     | Columbia.....       | Boone.....          |
| Dewey, Charles Edward.....        | A. B. | Jefferson City..... | Cole.....           |
| Durham, Lisbon Elwood.....        | B. L. | Elston.....         | ".....              |
| Freudenberger, Norman.....        | A. B. | Clarksburg.....     | Moniteau.....       |
| Geiger, Harry Valter.....         | B. L. | Rich Hill.....      | Bates.....          |
| Gerig, John Lawrence.....         | A. B. | Columbia.....       | Boone.....          |
| Gray, Felix Zallie.....           | "     | Santa Fe.....       | Monroe.....         |
| Harrison, Cora.....               | "     | Bethany.....        | Harrison.....       |
| Hegnauer, Leonard, Jr.....        | B. S. | Prairie City.....   | Bates.....          |
| Henderson, Cicero Adolphus.....   | B. L. | Paris.....          | Monroe.....         |
| Hock, William Casper.....         | "     | Buckner.....        | Jackson.....        |
| Holman, Thomas.....               | B. S. | Anutt.....          | Dent.....           |
| Huggins, George Elsworth.....     | B. L. | Lamar.....          | Barton.....         |
| Jackson, Clarence Martin.....     | B. S. | Martinstown.....    | Putnam.....         |
| Knepper, Martha Myrtle.....       | B. L. | Guy.....            | Atchison.....       |
| McFarland, Marion.....            | A. B. | Monroe City.....    | Monroe.....         |
| McMahan, William Tatom.....       | B. L. | Seymour.....        | Webster.....        |
| Major, John William McGarvey..... | A. B. | Blackburn.....      | Saline.....         |
| Miller, Camille Maud.....         | A. B. | St. Joseph.....     | Buchanan.....       |
| Perkins, Madison Love.....        | B. L. | Mountain Grove..... | Wright.....         |
| Perrine, Leroy Levi.....          | B. S. | Lamar.....          | Barton.....         |
| Perry, Thomas Benton.....         | "     | Carthage.....       | Jasper.....         |
| Phillips, Murray, Jr.....         | A. B. | New Madrid.....     | New Madrid.....     |
| Powell, Bessie.....               | B. L. | Columbia.....       | Boone.....          |
| Rautenstrauch, Irvin.....         | A. B. | Sedalia.....        | Pettis.....         |
| Riley, Lottie Marie.....          | B. L. | Columbia.....       | Boone.....          |
| Russell, Antoine Edward.....      | A. B. | Spokane, Wash.....  | ".....              |
| Spohrer, Frank Otto.....          | B. S. | Fredericksburg..... | Gasconade.....      |
| Strange, Pliny Pobinson.....      | A. B. | Ashland, Ore.....   | ".....              |
| Switzler, Royall Hill.....        | "     | Columbia.....       | Boone.....          |
| Walker, Nellie.....               | "     | St. Joseph.....     | Buchanan.....       |
| Williams, Horace Beckley.....     | "     | Dallas, Tex.....    | ".....              |
| Wilson, William Frank.....        | "     | Cape Girardeau..... | Cape Girardeau..... |

-46

## SOPHOMORE CLASS.

|                                  |       |                     |                 |
|----------------------------------|-------|---------------------|-----------------|
| Alexander, Emmet Gerald.....     | A. B. | Blackburn.....      | Saline.....     |
| Bailey, Frank Meeker.....        | B. S. | Warrensburg.....    | Johnson.....    |
| Beazley, Arthur Perry.....       | "     | Columbia.....       | Boone.....      |
| Bell, Charles Thomas.....        | A. B. | Barnard.....        | Nodaway.....    |
| Brandenberger, Jacobina.....     | B. S. | Linneus.....        | Linn.....       |
| Campbell, Laura Belle.....       | A. B. | Columbia.....       | Boone.....      |
| Campbell, Philip Leonidas.....   | B. L. | Goliad, Texas.....  | ".....          |
| Cleary, Charles Fred Elijah..... | A. B. | Chillicothe.....    | Livingston..... |
| Creason, Goodwin.....            | B. L. | Columbia.....       | Boone.....      |
| Crump, Rosa Delcena.....         | "     | Lancaster.....      | Schuyler.....   |
| Dimmitt, Philip Vaughn.....      | B. S. | Shelbyville.....    | Shelby.....     |
| Dix, Mary Blanche.....           | B. L. | Jefferson City..... | Cole.....       |
| Edmonds, Raymore Sautley.....    | "     | Miami.....          | Saline.....     |

| Name.                           | Course. | Postoffice.           | County.             |
|---------------------------------|---------|-----------------------|---------------------|
| Edwards, John Crockett.....     | B. L.   | Centralia.....        | Boone.....          |
| Fewsmith, Stella.....           | A. B.   | Columbia.....         | ".....              |
| French, Wilbur Manard.....      | B. L.   | Payette, Idaho.....   | ".....              |
| Freudenberger, Henry.....       | "       | Clarksburg.....       | Moniteau.....       |
| Ginnings, Robert Meade.....     | "       | Kirksville.....       | Adair.....          |
| Gladney, Franklin Young.....    | A. B.   | Auburn.....           | Lincoln.....        |
| Gordon, Daisy Lonore.....       | B. S.   | Columbia.....         | Boone.....          |
| Greer, Bertha Alice.....        | A. B.   | Joplin.....           | Jasper.....         |
| Guffey, Don Carlos.....         | B. S.   | Unionville.....       | Putnam.....         |
| Hall, Judson Holmes.....        | "       | Sedalia.....          | Pettis.....         |
| Harshe, Robert Bartholow.....   | B. L.   | Columbia.....         | Boone.....          |
| Hawkins, Richmond Laurin.....   | A. B.   | ".....                | ".....              |
| Highley, Mont Frederick.....    | B. L.   | Farmington.....       | St. Francois.....   |
| Houck, Giboney.....             | A. B.   | Cape Girardeau.....   | Cape Girardeau..... |
| House, Ralph Emerson.....       | B. L.   | Columbia.....         | Boone.....          |
| Howard, Ida Elizabeth.....      | "       | ".....                | ".....              |
| Howard, Thomas Perry.....       | A. B.   | Parshley.....         | Jasper.....         |
| Huffman, Carl.....              | B. L.   | Caruthersville.....   | Pemiscot.....       |
| Jenkins, Charles Oscar.....     | "       | Spring Garden.....    | Miller.....         |
| Johnson, Elnora.....            | B. S.   | Maitland.....         | Holt.....           |
| Kline, May.....                 | B. L.   | Bismarck.....         | St. Francois.....   |
| Leavenworth, George.....        | B. S.   | Ste. Genevieve.....   | Ste. Genevieve..... |
| Lockwood, Bart Marshall.....    | B. L.   | Rockport.....         | Atchison.....       |
| Lowen, Archer Hamilton.....     | B. S.   | Trenton.....          | Grundy.....         |
| Lucas, William Caldwell.....    | A. B.   | Osceola.....          | St. Clair.....      |
| McFarland, Byron.....           | "       | Monroe City.....      | Monroe.....         |
| March, Allen Wright.....        | B. L.   | Hallsville.....       | Boone.....          |
| *Miles, Woodward Morris.....    | A. B.   | Union City, Tenn..... | ".....              |
| Miller, Herman Benjamin.....    | B. L.   | Canton.....           | Lewis.....          |
| Miller, Harriet Neely.....      | A. B.   | St. Joseph.....       | Buchanan.....       |
| Moore, Ada May.....             | B. L.   | Perry.....            | Ralls.....          |
| Moore, Ida Desha.....           | "       | Bunker Hill.....      | Lewis.....          |
| Naylor, George Washington.....  | "       | Maud.....             | Shelby.....         |
| Packard, John Erastus.....      | A. B.   | Columbia.....         | Roone.....          |
| Parkhurst, Charles Leonard..... | B. S.   | Sweet Springs.....    | Saline.....         |
| Potter, Peter.....              | "       | Springfield.....      | Greene.....         |
| Riggs, Lena.....                | "       | Farmer.....           | Pike.....           |
| Robertson, George Gordon.....   | A. B.   | Cuba.....             | Crawford.....       |
| Salmon, Merritt Kimbrough.....  | "       | Clinton.....          | Henry.....          |
| Seward, William.....            | "       | Oak Ridge.....        | Cape Girardeau..... |
| Sexton, Floyd.....              | B. L.   | Columbia.....         | Boone.....          |
| Shipley, Sylvanus Carl.....     | B. S.   | ".....                | ".....              |
| Shouse, Jouett H.....           | A. B.   | Mexico.....           | Audrain.....        |
| Sinclair, Elizabeth May.....    | B. L.   | Columbia.....         | Boone.....          |
| Smith, Clyn.....                | B. S.   | Collins.....          | St. Clair.....      |
| Smith, George Alexander.....    | B. L.   | Columbia.....         | Boone.....          |
| Stone, Frank Powell.....        | "       | Macon.....            | Macon.....          |
| Utley, Lee.....                 | "       | Miami.....            | Saline.....         |
| Walmsley, John Fletcher.....    | A. B.   | Sedalia.....          | Pettis.....         |
| Williams, Clyde.....            | B. L.   | Grubville.....        | Jefferson.....      |
| Wolz, Maria.....                | B. S.   | Trenton.....          | Grundy.....         |
| Wulfert, Margaret Anne.....     | B. L.   | Columbia.....         | Boone.....          |
| Young, William Wilson.....      | A. B.   | Lexington.....        | Lafayette.....      |

—46

## FRESHMAN CLASS.

|                              |       |                  |               |
|------------------------------|-------|------------------|---------------|
| Anderson, John Lewis.....    | A. B. | Columbia.....    | Boone.....    |
| Arnold, Mercer.....          | B. L. | Joplin.....      | Jasper.....   |
| Barlow, Gilbert.....         | A. B. | Bethany.....     | Harrison..... |
| Barnes, Clarence Abel.....   | B. L. | Mexico.....      | Audrain.....  |
| Bass, Hugh Glenn.....        | A. B. | Columbia.....    | Boone.....    |
| Bassett, Arthur.....         | "     | Paris.....       | Monroe.....   |
| Bissett, Clyde Aigner.....   | B. S. | Springfield..... | Greene.....   |
| Blake, Maxwell.....          | B. L. | Kansas City..... | Jackson.....  |
| Bland, William Franklin..... | "     | King City.....   | Gentry.....   |
| Brandon, Ernest Coe.....     | B. S. | Sedalia.....     | Pettis.....   |
| Brandt, Arnold Louis.....    | "     | Warrenton.....   | Warren.....   |
| Brashear, Ida Beulah.....    | B. L. | Kirksville.....  | Adair.....    |

\*Left before matriculating.

| Name.                           | Course. | Postoffice.          | County.             |
|---------------------------------|---------|----------------------|---------------------|
| Briscoe, Edward Andrew.....     | B. S.   | Tipton.....          | Moniteau.....       |
| Burruss, Will Bledsoe.....      | B. L.   | Columbia.....        | Boone.....          |
| Caldwell, Edward Guerrant....   | "       | Slater.....          | Saline.....         |
| Camron, Elisha Frank, Jr.....   | "       | Nevada.....          | Vernon.....         |
| Carroll, James Edward.....      | A. B.   | St. Louis City.....  |                     |
| Coffing, Lucas Riley.....       | B. S.   | Columbia.....        | Boone.....          |
| DeBolt, Edith Laurestine.....   | B. L.   | Trenton.....         | Grundy.....         |
| Deister, John Louis.....        | A. B.   | Harlem.....          | Clay.....           |
| Doyle, Harrison Sisson.....     | B. S.   | Sedalia.....         | Pettis.....         |
| Edmondson, George Archibald..   | "       | Mexico.....          | Audrain.....        |
| Eitzen, Meta Theresa.....       | "       | Washington.....      | Franklin.....       |
| Fast, Carl Frederick.....       | A. B.   | Sedalia.....         | Pettis.....         |
| Fisher, Mary McFarlane.....     | B. L.   | Columbia.....        | Boone.....          |
| Fugitt, Reuben William.....     | "       | Carthage.....        | Jasper.....         |
| Fugitt, Olive Katherine.....    | "       | ".....               | ".....              |
| Gardner, Preston Edwin.....     | "       | Nevada.....          | Vernon.....         |
| Gerig, Rosalie.....             | A. B.   | Columbia.....        | Boone.....          |
| Goodson, Paul.....              | B. L.   | Carrollton.....      | Carroll.....        |
| Gray, Chester Harold.....       | "       | Columbia.....        | Boone.....          |
| Gray, Daniel Thomas.....        | "       | ".....               | ".....              |
| Gray, Mary.....                 | "       | ".....               | ".....              |
| Grimes, Dallas Polk.....        | "       | Hemple.....          | Clinton.....        |
| Guitar, Emily.....              | "       | Columbia.....        | Boone.....          |
| Hall, Nora Keith.....           | "       | ".....               | ".....              |
| Hall, John Chappelle.....       | B. S.   | Marceline.....       | Linn.....           |
| Halliburton, Westley.....       | B. L.   | Carthage.....        | Jasper.....         |
| Halterman, Adrain Guy.....      | B. S.   | Mt. Vernon.....      | Lawrence.....       |
| Hardy, Joseph Bryant.....       | "       | Waterloo, Ill.....   |                     |
| Haverstick, Edward Everett....  | B. L.   | House Springs.....   | Jefferson.....      |
| Hockaday, Charles Ernest.....   | A. B.   | Belton.....          | Cass.....           |
| Hunter, Lewis Linn.....         | "       | Benton.....          | Scott.....          |
| Jones, Duke William Edward....  | B. L.   | Rich Hill.....       | Bates.....          |
| Kirkpatrick, Harry Everett....  | B. S.   | Newcomer.....        | Charlton.....       |
| Lockwood, Helen Marie.....      | "       | Rockport.....        | Atchison.....       |
| McAlester, Berry.....           | A. B.   | Columbia.....        | Boone.....          |
| McMillan, Paul Duncan.....      | B. S.   | Maryville.....       | Nodaway.....        |
| McReynolds, Allen.....          | B. L.   | Carthage.....        | Jasper.....         |
| Marbut, Annas.....              | B. S.   | Purdy.....           | Barry.....          |
| March, John Goodson.....        | A. B.   | Hallsville.....      | Boone.....          |
| Moore, John Beech.....          | B. L.   | Oran.....            | Scott.....          |
| Moore, William Dunn.....        | A. B.   | St. Louis City.....  |                     |
| Moore, Henry Stephen.....       | "       | Oran.....            | Scott.....          |
| Northcutt, Lewis.....           | B. S.   | Saverton.....        | Ralls.....          |
| Oliver, Mary Margaret.....      | "       | Brown's Station..... | Boone.....          |
| Packard, Eva Lorena.....        | "       | Cameron.....         | Clinton.....        |
| Paul, Rofla Samuel.....         | B. L.   | Moberly.....         | Randolph.....       |
| Risley, Chester Howard.....     | B. S.   | Cameron.....         | Clinton.....        |
| Robertson, Gay Aufricht.....    | B. L.   | Cuba.....            | Crawford.....       |
| Robinson, Clark.....            | "       | Columbia.....        | Boone.....          |
| Rogers, Thomas Hamilton.....    | A. B.   | Jefferson City.....  | Cole.....           |
| Ruffner, Charles Shumway.....   | B. L.   | Palmyra.....         | Marion.....         |
| Sawyer, Samuel Page.....        | "       | Lexington.....       | Lafayette.....      |
| Schafer, Frederic Charles.....  | "       | Lancaster.....       | Schuyler.....       |
| Scudder, William Russell.....   | A. B.   | Liberty.....         | Clay.....           |
| Sedgwick, Frank Lee.....        | B. L.   | Lamar.....           | Barton.....         |
| See, Edward Everett.....        | B. S.   | Montgomery City..... | Montgomery.....     |
| Selbert, Daniel Glenn.....      | "       | Jackson.....         | Cape Girardeau..... |
| Shipley, Edith.....             | A. B.   | Columbia.....        | Boone.....          |
| Steele, Mary Isabel.....        | B. S.   | Ladonia.....         | Audrain.....        |
| Stephens, James L.....          | A. B.   | Columbia.....        | Boone.....          |
| Stephens, Hugh.....             | "       | ".....               | ".....              |
| Stewart, William Brown.....     | B. L.   | Moberly.....         | Randolph.....       |
| Strickler, Nana.....            | B. S.   | Columbia.....        | Boone.....          |
| Summerville, Robert Oscar....   | B. L.   | Chillicothe.....     | Livingston.....     |
| Switzler, Wm F.....             | A. B.   | Columbia.....        | Boone.....          |
| Tuttie, Floyd Wilkins.....      | "       | ".....               | ".....              |
| Vaughan, Benjamin Warren....    | B. S.   | Urbana.....          | Dallas.....         |
| Watson, Sallie Elliott Ashley.. | A. B.   | Webster Groves.....  | St. Louis.....      |
| Wilcoxon, Thomas Hurley.....    | B. L.   | Ashley.....          | Pike.....           |

| Name.                              | Course. | Postoffice.           | County.             |
|------------------------------------|---------|-----------------------|---------------------|
| SPECIAL STUDENTS.                  |         |                       |                     |
| Allen, Mary Swepson.....           | B. L.   | Columbia.....         | Boone.....          |
| Belden, Henry Marvin.....          |         | Springdale, Conn      |                     |
| Burruss, Frank McElroy.....        |         | Columbia.....         | Boone.....          |
| Bush, Zenna.....                   | B. L.   | Van Alstyne, Tex      |                     |
| Davis, Almeda.....                 | B. L.   | Sheldon.....          | Vernon.....         |
| Davis, Aubrey Wilton.....          | B. L.   | Shelbyville.....      | Shelby.....         |
| Depee, Emma.....                   |         | Greenfield.....       | Dade.....           |
| Dinsmoor, Mrs. Laura Brashear..... |         | Columbia.....         | Boone.....          |
| Farmer, Martin.....                |         | Farmer.....           | Pike.....           |
| Ferrel, John Dade.....             |         | Garden City.....      | Cass.....           |
| Gwinn, Arthur.....                 |         | Sprague.....          | Bates.....          |
| Haggard, Beverly Price.....        |         | Columbia.....         | Boone.....          |
| Hewitt, Elijah William.....        |         | Bethel.....           | Shelby.....         |
| Higdon, Robert Absalom.....        |         | Clifton City.....     | Pettis.....         |
| Hockaday Josephine B.....          |         | Columbia.....         | Boone.....          |
| Jellison, Daisy.....               | B. L.   | Hannibal.....         | Marion.....         |
| Jesse, Mrs. Addie Polk.....        |         | Columbia.....         | Boone.....          |
| Jones, Mrs. Clara Thompson.....    |         |                       | ".....              |
| Linthicum, Daniel Anthony.....     |         | Helena, Ark.....      |                     |
| Long, Laura Virginia.....          |         | Columbia.....         | Boone.....          |
| Mumford, Mrs. Jes. Kennedy.....    |         | ".....                | ".....              |
| Owings, Emilee Brown.....          |         | Fayette.....          | Howard.....         |
| Penn, Mrs. Helen Hale.....         |         | Columbia.....         | Boone.....          |
| Phillips, Mrs. Bes. Beauchamp..... |         | Leesburg, Fla.....    |                     |
| Pippin, Bland Nixon.....           |         | Waynesville.....      | Pulaski.....        |
| Price, Mrs. Mary Lakenan.....      |         | Columbia.....         | Boone.....          |
| Rippee, Jessie Maud.....           | A. B.   | ".....                | ".....              |
| Tannehill, Maud Esther.....        | A. B.   | Amarilla, Tex.....    |                     |
| Thompson, Guy Atwood.....          |         | Pattonville.....      | St. Louis.....      |
| Tindall, Mrs. Lula Gentry.....     |         | Columbia.....         | Boone.....          |
| Todd, Laetitia.....                | A. B.   | ".....                | ".....              |
| Turpin, Mary.....                  |         | ".....                | ".....              |
| Updegraff, Mrs. Alice M. Lamb..... |         | ".....                | ".....              |
| Weeks, Mrs. Mary Arnoldia.....     |         | ".....                | ".....              |
| West, Marion.....                  |         | Somerville, Mass..... |                     |
| Whitten, Mrs. Nora Todd.....       |         | Columbia.....         | Boone.....          |
| IRREGULAR STUDENTS.                |         |                       |                     |
| Alison, Milton.....                | B. S.   | Marshall.....         | Saline.....         |
| Atkinson, Julia Ferguson.....      | B. L.   | Jonesburg.....        | Montgomery.....     |
| Doty, Augustus Henry.....          | B. S.   | Jamesport.....        | Davies.....         |
| Kahn, Gussye.....                  |         | St. Joseph.....       | Buchanan.....       |
| Snyder, Robert McClure, Jr.....    | B. L.   | Kansas City.....      | Jackson.....        |
| Woody, Nellie Fly.....             | A. B.   | Cape Girardeau.....   | Cape Girardeau..... |

—36

—6

## Normal Department.

| Name.                           | Postoffice.        | County.         |
|---------------------------------|--------------------|-----------------|
| Barnes, Charles Merline.....    | New Madrid.....    | New Madrid..... |
| Beazley, Arthur Perry.....      | Columbia.....      | Boone.....      |
| Bell, Charles Thomas.....       | Barnard.....       | Nodaway.....    |
| Blackwell, Laura Craig.....     | Columbia.....      | Boone.....      |
| Conran, James Francis.....      | High Hill.....     | Montgomery..... |
| Fugitt, Reuben William.....     | Carthage.....      | Jasper.....     |
| Fugitt, Olive Katherine.....    |                    |                 |
| Gray, Felix Lallie.....         | Santa Fe.....      | Monroe.....     |
| Haverstick, Edward Everett..... | House Springs..... | Jefferson.....  |
| Hitch, Arthur Martin.....       | Cuba.....          | Crawford.....   |
| Hock, William Casper.....       | Buckner.....       | Jackson.....    |
| Huggins, Gurry Elsworth.....    | Lamar.....         | Barton.....     |
| Hunker, George Henry.....       | Roanoke.....       | Randolph.....   |
| Jellison, Daisy.....            | Hannibal.....      | Marion.....     |



| Name.                              | Postoffice.          | County.        |
|------------------------------------|----------------------|----------------|
| Jenkins, Charles Oscar.....        | Spring Garden.....   | Miller.....    |
| Johnson, Elnora.....               | Maitland.....        | Holt.....      |
| Kahn, Gussye.....                  | St. Joseph.....      | Buchanan.....  |
| McIntyre, Joe Shelby.....          | Mexico.....          | Audrain.....   |
| Manring, John Franklin.....        | McFall.....          | Gentry.....    |
| Organ, Minnie Katherine.....       | Salem.....           | Dent.....      |
| Owen, Jesse Mordicai.....          | Fulton.....          | Callaway.....  |
| Packard, Eva Lorena.....           | Cameron.....         | Clinton.....   |
| Riggs, Lena.....                   | Farmer.....          | Pike.....      |
| Riley, Lotta Maria.....            | Columbia.....        | Boone.....     |
| Rogers, Lalla Rookh.....           | Kingston.....        | Caldwell.....  |
| Schafer, Frederic Charles.....     | Lancaster.....       | Schuyler.....  |
| Sears, Eleanor Phidelia.....       | Barnett.....         | Morgan.....    |
| Strange, Pliny Robinson.....       | Ashland, Oregon..... |                |
| Strickler, Nana.....               | Columbia.....        | Boone.....     |
| Strong, Charles Monroe.....        | Stotesbury.....      | Vernon.....    |
| Swearingen, Ethel Barton.....      | Nevada.....          | ".....         |
| Turner, Charles William.....       | Hale.....            | Carroll.....   |
| Watson, Sallie Elliott Ashley..... | Webster Groves.....  | St. Louis..... |

—33

## TEACHERS' COURSE.

|                                 |                       |                |
|---------------------------------|-----------------------|----------------|
| Berry, Alleen Virginia.....     | Columbia.....         | Boone.....     |
| Berry, James Antonia.....       | Fulton.....           | Callaway.....  |
| Burrus, Olney.....              | Grain Valley.....     | Jackson.....   |
| Cheesman, Alonzo.....           | Bogard.....           | Carroll.....   |
| Clinard, Elisa.....             | Stokley.....          | Pettis.....    |
| Davis, Thomas Smith.....        | Eurka Spgs., Ark..... |                |
| Dyer, Fordyce N.....            | Amity.....            | Caldwell.....  |
| Fowler, Effie Leona.....        | Slater.....           | Saline.....    |
| Harlow, Victor Emanuel.....     | Argentville.....      | Lincoln.....   |
| Jamison, Mary Elizabeth.....    | Columbia.....         | Boone.....     |
| Jennings, William Olin.....     | ".....                | ".....         |
| Meyers, Nora.....               | Jefferson City.....   | Cole.....      |
| Mitchell, Eugene Tinsley.....   | Cairo.....            | Randolph.....  |
| Moyer, Charley Edmond.....      | Cookville.....        | Pulaski.....   |
| Oliver, Elizabeth.....          | Sturgeon.....         | Boone.....     |
| Owen, May Soplah.....           | Fulton.....           | Callaway.....  |
| Shannon, Ada.....               | Salisbury.....        | Charlton.....  |
| Shipe, Ida Olive.....           | Columbia.....         | Boone.....     |
| Smith, Burton Lee.....          | Troy.....             | Lincoln.....   |
| Smith, Katherine Elizabeth..... | White's Store.....    | Howard.....    |
| Sweet, Arthur T.....            | Curryville.....       | Pike.....      |
| Swink, Lida May.....            | Festus.....           | Jefferson..... |
| Watt, George.....               | Bosworth.....         | Carroll.....   |
| Wulfert, Amelia Pauline.....    | Columbia.....         | Boone.....     |

—24

## Law Department.

| Name.                           | Postoffice.            | County.        |
|---------------------------------|------------------------|----------------|
| SENIOR.                         |                        |                |
| Adams, Arthur Nottingham.....   | Buckner.....           | Jackson.....   |
| Asbury, Al Edgar, Jr.....       | Higginsville.....      | Lafayette..... |
| Barnett, George Harlan.....     | Columbia.....          | Boone.....     |
| Bell, Fleetwood.....            | ".....                 | ".....         |
| Bonenkamp, William Louis.....   | Fayetteville, Ill..... |                |
| Bond, Refard.....               | Minco, Ind. Ter.....   |                |
| Booth, George Frederick.....    | DeSoto.....            | Jefferson..... |
| Bryan, William Alexander.....   | Brookfield.....        | Linn.....      |
| Covert, Charles Elmer.....      | Houston.....           | Texas.....     |
| Crowley, George Washington..... | Lawson.....            | Ray.....       |
| Dora, Robert Linton.....        | Charleston, Ill.....   |                |
| Duley, Elsus Enoch.....         | Ashland.....           | Boone.....     |



| Name.                            | Postoffice.           | County.              |
|----------------------------------|-----------------------|----------------------|
| Elam, Oscar Berton.....          | Lamar.....            | Barton.....          |
| Elliott, George Nathan.....      | Elsberry.....         | Lincoln.....         |
| Emerson, H. Grant.....           | Hatfield.....         | Harrison.....        |
| Evans, George Albert.....        | Golden City.....      | Barton.....          |
| Ferguson, Frederic Kirkwood..... | Paola, Kan.....       | Audrain.....         |
| Gatewood, William Orien.....     | Skinner.....          | Clinton.....         |
| Gordon, James Allen.....         | Plattsburgh.....      | Clinton.....         |
| Gottschalk, Max William.....     | St. Louis City.....   | Vernon.....          |
| Graves, Charles Herbert.....     | Nevada.....           | Boone.....           |
| Gray, George Leslie.....         | Columbia.....         | Bates.....           |
| Gwinn, Arthur.....               | Sprague.....          | Cass.....            |
| Hall, Charles Ripley.....        | Harrisonville.....    | Shelby.....          |
| Hanger, Rob Roy.....             | Clarence.....         | St. Clair.....       |
| Hastain, Ed.....                 | Appleton City.....    | Miller.....          |
| Hawkins, William Carroll.....    | Brumley.....          | Caldwell.....        |
| Henkins, Joseph Adam.....        | Kingston.....         | Boone.....           |
| House, Jesse Eugene.....         | Columbia.....         | Talequah, I. T.....  |
| Hughes, George McLaughlin.....   | Moberly.....          | Randolph.....        |
| Jarvis, Robert Earle.....        | Lee's Summit.....     | Jackson.....         |
| Jennings, George Washington..... | Nevada.....           | Vernon.....          |
| Key, William Casey.....          | Leavenworth, Kas..... | Moniteau.....        |
| Kimmel, Karl.....                | California.....       | Clinton.....         |
| Kraemer, Herman.....             | Cameron.....          | Buchanan.....        |
| Livingstone, John Alexander..... | McAlester, I. T.....  | Gentry.....          |
| McAlester, James Burney.....     | St. Joseph.....       | Buchanan.....        |
| McNeely, John Dowd.....          | McFall.....           | Moniteau.....        |
| Manring, John Franklin.....      | St. Joseph.....       | Boone.....           |
| Michelson, Lionel Anselm.....    | Clarksburg.....       | Jackson.....         |
| Moore, Otho Clay.....            | Brown's Station.....  | Benton.....          |
| Murry, Harvey Dennie.....        | Kansas City.....      | Callaway.....        |
| Ostergard, Martin Jackson.....   | Fristoe.....          | Cooper.....          |
| Owen, Theodore Clarence.....     | Fulton.....           | Adair.....           |
| Pemberton, Morton Hord.....      | Clifton City.....     | Kirksville.....      |
| Potter, James Louis.....         | Richmond, Ky.....     | Kansas City.....     |
| Rieger, James Edward.....        | Kansas City.....      | Columbia.....        |
| Roberts, Robert Edwin.....       | Columbia.....         | Sedalla.....         |
| Rooney, Robert Emmet.....        | Sedalla.....          | St. Louis City.....  |
| Searcy, Lemuel Thomas.....       | St. Louis City.....   | Kansas City.....     |
| Sinnett, Harold Blanchard.....   | Kansas City.....      | Festus.....          |
| Steltemeier, Fred Casper.....    | Festus.....           | St. Paul, Minn.....  |
| Swearingen, Orson Hansford.....  | St. Paul, Minn.....   | Lamar.....           |
| Swink, Robert Augustus.....      | Lamar.....            | Boonville.....       |
| Taylor, Jesse Hayden.....        | Boonville.....        | Miami.....           |
| Timmonds, Harry Whitney.....     | Miami.....            | Dundee.....          |
| Tompkins, Will Eugene.....       | Dundee.....           | Pattonsburg.....     |
| Wheeler, Sydney Johnson.....     | Pattonsburg.....      | St. Lucas, Iowa..... |
| Wilkinson, Robert Edward.....    | St. Lucas, Iowa.....  | Macon.....           |
| Williams, Albert Jefway.....     | Macon.....            | Versailles.....      |
| Williams, William Detmer.....    | Versailles.....       | Woodlawn.....        |
| Winter, John P.....              | Woodlawn.....         | Monroe.....          |
| Wood, Stuart Monroe.....         |                       |                      |
| Woods, Richard Harry.....        |                       |                      |
| Woods, Frank Tipton.....         |                       |                      |

## JUNIOR CLASS.

-65.

|                                |                  |                |
|--------------------------------|------------------|----------------|
| Baker, John Thomas.....        | Gant.....        | Audrain.....   |
| Bente, Charles William.....    | Otterville.....  | Cooper.....    |
| Blanton, David Anderson.....   | Columbia.....    | Boone.....     |
| Booher, Lloyd Webster.....     | Savannah.....    | Andrew.....    |
| Bridgman, Richard Balden.....  | Bigelow.....     | Holt.....      |
| Briscoe, Philip Elias.....     | Green Ridge..... | Pettis.....    |
| Cashion, Gilbert Lawrence..... | Perryville.....  | Perry.....     |
| Catron, Edward M.....          | Lexington.....   | Lafayette..... |
| Cobb, Thomas Morris, Jr.....   | “.....           | “.....         |
| Cramer, Floyd Bruce.....       | Nevada.....      | Vernon.....    |
| Crawford, William Calvin.....  | Wagoner.....     | Cedar.....     |
| Davis, Tilton.....             | Lexington.....   | Lafayette..... |
| Dow, Harvey Dill.....          | Georgetown.....  | Pettis.....    |

| Name.                               | Postoffice.          | County.             |
|-------------------------------------|----------------------|---------------------|
| Dunham, Samuel S.....               | Bevier.....          | Macon.....          |
| Duvall, Arthur.....                 | Butler.....          | Bates.....          |
| Fant, David Beard.....              | Lamar.....           | Barton.....         |
| Graham, Milo Fowler.....            | Richmond.....        | Ray.....            |
| Gumm, Eugene Payton.....            | Odessa.....          | Lafayette.....      |
| Halstead, Samuel Reeves.....        | Lawson.....          | Ray.....            |
| Hamilton, Edward Richard.....       | Columbia.....        | Boone.....          |
| Harris, Clifford Burdette.....      | Harris.....          | Sullivan.....       |
| Haydon, Curtis.....                 | Deer Park.....       | Boone.....          |
| Higdon, Robert Absalom.....         | Clifton City.....    | Pettis.....         |
| Hill, Adam.....                     | Independence.....    | Jackson.....        |
| Houston, James S. Montgomery.....   | Raymore.....         | Cass.....           |
| Jones, Samuel Franklin.....         | Mt. Vernon.....      | Lawrence.....       |
| Killam, Oliver Winfield.....        | Winfield.....        | Lincoln.....        |
| Kirk, Robert Lawrence.....          | Jefferson City.....  | Cole.....           |
| Kitt, Paul Duane.....               | Chillicothe.....     | Livingston.....     |
| Klepper, Frank B.....               | Polo.....            | Caldwell.....       |
| Lyons, Martin Peter.....            | Shackleford.....     | Saline.....         |
| MacBride, John Leslie Ffenuell..... | Nevada.....          | Vernon.....         |
| McKnight, James C. L.....           | Poor Fork, Ky.....   | Putnam.....         |
| Madden, Ira Gilbert.....            | Powersville.....     | Carroll.....        |
| Mars, Frank Little.....             | Carrollton.....      | Boone.....          |
| Mountjoy, Joseph Shannon.....       | Columbia.....        | Montgomery.....     |
| Nebel, John Vincent.....            | High Hill.....       | Callaway.....       |
| Owen, Jesse Mordecia.....           | Fulton.....          | Platte.....         |
| Owsley, Henry Templeton.....        | Platte City.....     | Boone.....          |
| Paxton, Charles Flagg.....          | Centralia.....       | Andrew.....         |
| Phillips, Everett Eugene.....       | Savannah.....        | Marion.....         |
| Plowman, John Lawrence.....         | Hannibal.....        | Monroe.....         |
| Reynolds, John Randolph.....        | Florida.....         | Boone.....          |
| Russell, Francis Hayden.....        | Columbia.....        | Lafayette.....      |
| Ryland, Leonard Gamble.....         | Lexington.....       | Boone.....          |
| Schwabe, James Web.....             | Columbia.....        | Jasper.....         |
| Shepherd, Edward Lee.....           | Joplin.....          | Gentry.....         |
| Shultz, Orrillis Edward.....        | McFall.....          | Ozark.....          |
| Sidebottom, Earl Easley.....        | Santa Fe, N. M.....  | St. Louis.....      |
| Smith, Randall Evander.....         | Almartha.....        | Boone.....          |
| Smoke, Samuel Aaron.....            | Fort White, Fla..... | Cape Girardeau..... |
| Stockslager, Roscoe Newell.....     | Hailey, Idaho.....   | Buchanan.....       |
| Thompson, Guy Atwood.....           | Pattonville.....     | Boone.....          |
| Thurston, Walter Alonzo.....        | Columbia.....        | Pettis.....         |
| Tiedemann, John Earnest.....        | Jackson.....         | Boone.....          |
| Tomlinson, Robert Lee.....          | Atchison, Kan.....   | Boone.....          |
| Townsend, John Rogers.....          | St. Joseph.....      | Worth.....          |
| Turner, Martin Ernest.....          | Columbia.....        | Boone.....          |
| Walkup, Frank Harvey.....           | Sedalia.....         | Boone.....          |
| Welles, Edmund La Pice.....         | Columbia.....        | Boone.....          |
| White, Crawford Elder.....          | ".....               | Boone.....          |
| Willhite, Joseph Vance.....         | Oxford.....          | Boone.....          |
| Wright, Edgar Lee.....              | Brown's Station..... | Boone.....          |
| York, Minor Manasseh.....           | Lapore, Tex.....     |                     |
| SPECIAL.                            |                      | -64                 |
| Buster, Charles Green.....          | Bevier.....          | Macon.....          |
| Hausam, Adam.....                   | Stewartsville.....   | De Kalb.....        |
| Morgan, Charles Lafayette.....      | Sarcoie.....         | Jasper.....         |
| Soper, Frank.....                   | Liberty.....         | Clay.....           |
|                                     |                      | -4                  |

## Medical Department.

|                            |                 |             |
|----------------------------|-----------------|-------------|
| Alexander, Ralph Lee.....  | Blackburn.....  | Saline..... |
| Allen, Frank Withers.....  | Barryville..... | Macon.....  |
| Banks, Samuel Griffin..... | Columbia.....   | Boone.....  |
| Bass, Andrew Jackson.....  | ".....          | ".....      |
| Benage, Otto.....          | Iberia.....     | Miller..... |

| Name.                            | Postoffice.         | County.           |
|----------------------------------|---------------------|-------------------|
| Benage, John Leslie.....         | Iberia.....         | Miller.....       |
| Broderick, Daniel Edward.....    | Kansas City.....    | Jackson.....      |
| Butman, Winthrop Warren.....     | Macon.....          | Macon.....        |
| Clark, Manuel Thomas.....        | Columbia.....       | Boone.....        |
| Coleman, Walter William.....     | Foristell.....      | St. Charles.....  |
| Conover, Charles Clinton.....    | Peculiar.....       | Cass.....         |
| Crowley, Claude Cuthbert.....    | Lawson.....         | Ray.....          |
| Detweiler, Andrew Sackson.....   | Washington.....     | Franklin.....     |
| Drake, Claire Ferdinand.....     | Boonville.....      | Cooper.....       |
| Evans, Walter Emmett.....        | Meadville.....      | Linn.....         |
| Evans, Edwin Elgin.....          | ".....              | ".....            |
| Fisher, James Montgomery.....    | Columbia.....       | Boone.....        |
| Fleming, John Bartley.....       | Farmington.....     | St. Francois..... |
| Gordon, Reverdy Johnson.....     | Columbia.....       | Boone.....        |
| Harsell, Thomas Lightburne.....  | Kearney.....        | Clay.....         |
| Hill, William Hickman.....       | Independence.....   | Jackson.....      |
| Hockaday, Carl Vincent.....      | Columbia.....       | Boone.....        |
| Holman, Jurney Hubert.....       | Hartford.....       | Putnam.....       |
| Johnson, Hans Christian.....     | Meadville.....      | Linn.....         |
| Lane, Hallie Hiram.....          | Harrisonville.....  | Cass.....         |
| Lillard, Alonzo Conduitt.....    | Columbia.....       | Boone.....        |
| McClane, Jean Edward.....        | ".....              | ".....            |
| McConnell, Talmage.....          | Sedalia.....        | Pettis.....       |
| Marshall, Archie Maupin.....     | Hager's Grove.....  | Shelby.....       |
| Martin, John Frederick.....      | Ohio.....           | St. Clair.....    |
| Mikel, Henry Franklin.....       | Columbia.....       | Boone.....        |
| Miller, Ira Hamilton.....        | Louisiana.....      | Pike.....         |
| Norwood, Frank Henderson.....    | Columbia.....       | Boone.....        |
| Parmer, Charles Chandler.....    | ".....              | ".....            |
| Pitney, Orville.....             | Moberly.....        | Randolph.....     |
| Reid, Robert Lee.....            | Columbia.....       | Boone.....        |
| Reynolds, William Hamilton.....  | Vermont.....        | Cooper.....       |
| Rothrock, Frank Blake.....       | Richmond.....       | Ray.....          |
| Rutherford, Henry Holcomb.....   | Ft. Smith, Ark..... | ".....            |
| Scrivener, Douglas Scott.....    | Columbia.....       | Boone.....        |
| Shaefer, Harry Irving Lewis..... | ".....              | ".....            |
| Shaefer, William Rothwell.....   | ".....              | ".....            |
| Stapp, Joseph Harvey.....        | Morton.....         | Ray.....          |
| Stephens, Phil. Howard.....      | Boonville.....      | Cooper.....       |
| Stouffer, Robert Walker.....     | Napton.....         | Saline.....       |
| Tatum, Harry Erskine.....        | Glasgow.....        | Howard.....       |
| Tilley, Robert Bruce.....        | Waynesville.....    | Pulaski.....      |
| Trader, George Henry.....        | Sedalia.....        | Pettis.....       |
| Turner, John William.....        | Hallsville.....     | Boone.....        |
| Weir, Edward Francis.....        | London, Canada..... | ".....            |
| Wolff, Lewis Gilmer.....         | Shawnee Mound.....  | Henry.....        |
| Young, John Calvin.....          | High Point.....     | Moniteau.....     |

## College of Agriculture and Mechanic Arts.

## A. SCHOOL OF AGRICULTURE.

| Name.                          | Postoffice.     | County.         |
|--------------------------------|-----------------|-----------------|
| FOURTH YEAR.                   |                 |                 |
| Adams, Charles Frederick.....  | Atherton.....   | Jackson.....    |
| Norton, John Henry.....        | Greensburg..... | Knox.....       |
| Sears, Alonzo James.....       | Barnett.....    | Morgan.....     |
| THIRD YEAR.                    |                 |                 |
| Lewelling, Walter William..... | High Hill.....  | Montgomery..... |
| McDermott, Joseph Lewis.....   | Buckner.....    | Jackson.....    |
| Shawhan, Thomas Redmon.....    | Lone Jack.....  | ".....          |

| Name.                               | Postoffice.          | County.             |
|-------------------------------------|----------------------|---------------------|
| SECOND YEAR.                        |                      |                     |
| Conley, Abraham Harrison.....       | Columbia .....       | Boone .....         |
| Evans, Seth Delency.....            | Meadville.....       | Linn .....          |
| Kline, George Rennick.....          | Bismarck .....       | St. Francois.....   |
| Knippenburg, Henry.....             | Femme Osage.....     | St. Charles.....    |
| Maloney, John Cornelious.....       | Cretcher.....        | Saline.....         |
| Roberts, Guy Alexander.....         | St. Joseph.....      | Buchanan.....       |
| Welch, James William.....           | Peace Valley.....    | Howell.....         |
| —7                                  |                      |                     |
| FIRST YEAR.                         |                      |                     |
| Allen, Robert Riddick.....          | Columbia.....        | Boone .....         |
| Bass, Lawrence Hood.....            | " .....              | " .....             |
| Blanton, Harry Bain.....            | " .....              | " .....             |
| Crouch, Andrew Monroe, Jr.....      | " .....              | " .....             |
| Dunlap, Ellen Louise.....           | Chillicothe.....     | Livingston.....     |
| Ferguson, Francis Augustin.....     | Columbia.....        | Boone .....         |
| Hayes, Lottie.....                  | " .....              | " .....             |
| Howard, Walter Lafayette.....       | Springfield.....     | Greene .....        |
| Jacques, William Raymond.....       | " .....              | " .....             |
| Lapsley, Robert Jay VanCourt.....   | Sweet Springs.....   | Saline.....         |
| Lipscomb, Millard Lewis, Jr.....    | Columbia.....        | Boone .....         |
| Loeb, Leon.....                     | " .....              | " .....             |
| McConathy, Overton Fitch.....       | Columbia.....        | Boone .....         |
| McGinnis, Francis Camp.....         | Terrell, Texas ..... | " .....             |
| Mott, George Elbert.....            | Hampton, Iowa .....  | " .....             |
| Newton, Ivie Wilmer.....            | High Point.....      | Moniteau.....       |
| Palmer, Warren Auvinell.....        | Highview .....       | Lincoln.....        |
| Pearcy, Claude Otis.....            | Thornfield.....      | Ozark.....          |
| Pearcy, Elmer Edgerton.....         | " .....              | " .....             |
| Powell, William Edward.....         | Columbia .....       | Boone.....          |
| Pringle, John Harvey.....           | Foristell.....       | St. Charles.....    |
| Tucker, Robert Wilson.....          | Sedalia.....         | Pettis.....         |
| Van Trump, Pomeroy.....             | Elmira.....          | Ray.....            |
| White, James David.....             | Columbia.....        | Boone.....          |
| Winchester, Luther.....             | Sikeston.....        | New Madrid.....     |
| Wood, William Edwin .....           | Barry.....           | Clay .....          |
| —26                                 |                      |                     |
| SPECIAL.                            |                      |                     |
| Evans, William Botts.....           | Meadville.....       | Linn .....          |
| Storm, Julia Fannie.....            | Kirksville.....      | Adair.....          |
| Willoughby, Claude Leake.....       | Columbia.....        | Boone.....          |
| —3                                  |                      |                     |
| SHORT WINTER COURSE IN AGRICULTURE. |                      |                     |
| Clarke, Wright.....                 | Jefferson City.....  | Cole .....          |
| Elliott, William West.....          | Windsor.....         | Henry .....         |
| Gruetzemacher, Edward Charles.....  | St. Louis City.....  | " .....             |
| Gruetzemacher, William Louis.....   | " .....              | " .....             |
| Holley, Robert Carl.....            | Memphis.....         | Scotland.....       |
| Hunter, Howard Carroll.....         | Louisiana.....       | Pike.....           |
| Kaesemacher, Gustave Charles.....   | Pilot Knob.....      | Iron .....          |
| Lang, Oscar.....                    | Appleton.....        | Cape Girardeau..... |
| McMeekin, Joseph Murphy.....        | Higginsville.....    | Lafayette.....      |
| McNew, Ellsworth.....               | Cowgill.....         | Caldwell.....       |
| Maize, Jesse Emmitt.....            | Happy Valley.....    | Harrison.....       |
| Mayer, Charles Edmund.....          | Cookville.....       | Pulaski.....        |
| Orr, Alfred Harry.....              | Salt Springs.....    | Saline.....         |
| Schuring, Herman Anton.....         | Weln.....            | Chariton.....       |
| Sibbit, Charles Dick.....           | Tindall.....         | Grundy.....         |
| Spannaus, Edward.....               | Augusta.....         | St. Charles.....    |
| Stender, Robert Martin.....         | St. Louis City.....  | " .....             |
| Stiebel, Antoinette.....            | " .....              | " .....             |
| Turner, Alonzo.....                 | Hallsville .....     | Boone.....          |
| Wehrman, Louis .....                | Truxton.....         | Lincoln.....        |
| Woodward, George Ditzler.....       | McFall.....          | Gentry.....         |
| —21                                 |                      |                     |

| Name.                                | Postoffice.        | County.         |
|--------------------------------------|--------------------|-----------------|
| SHORT WINTER COURSE IN HORTICULTURE. |                    |                 |
| Dunlap, Ellen Louise.....            | Chillicothe.....   | Livingston..... |
| Erwin, Arthur Thomas.....            | Steedman.....      | Callaway.....   |
| Hoag, William Bert.....              | Mountain Grove..   | Wright.....     |
| Park, Emma Janette.....              | Springfield.....   | Greene.....     |
| Simmons, Philip.....                 | Macon.....         | Macon.....      |
| Stinson, John Turner, B. S.....      | Fayetteville, Ark. | .....           |
| Sylvester, Philip Knight.....        | Osborn.....        | DeKalb.....     |
| Todd, Cad.....                       | Sedalia.....       | Pettis.....     |
| Van Trump, Pomeroy.....              | Elmira.....        | Ray.....        |
| Wilkerson, Kelly Bridgeford.....     | Santa Fe.....      | Monroe.....     |
| Winchester, Luther.....              | Morehouse.....     | New Madrid..... |

-11

## C. SCHOOL OF ENGINEERING.

| Name.                           | Course. | Postoffice.         | County.        |
|---------------------------------|---------|---------------------|----------------|
| SENIOR CLASS.                   |         |                     |                |
| Burkhart, Louis Hiawatha....    | M. E.   | Columbia.....       | Boone.....     |
| Dunlap, Arthur Hoyt.....        | C. E.   | Miami.....          | Saline.....    |
| Lotter, Henry Howell.....       | "       | Moberly.....        | Randolph.....  |
| McMeekin, William Graves.....   | "       | Higginsville.....   | Lafayette..... |
| Miller, William Alvin.....      | "       | Columbia.....       | Boone.....     |
| Rodhouse, Thomas Jacob.....     | "       | Mexico.....         | Audrain.....   |
| Rogers, Egbert Irvin.....       | "       | Cameron.....        | Clinton.....   |
| Stalkoff, George Roshlevsky...  | E. E.   | Columbia.....       | Boone.....     |
| JUNIOR CLASS.                   |         |                     |                |
| Broadhead, Garland Carr, Jr...  | C. E.   | Columbia.....       | Boone.....     |
| Cope, Walter Smalley.....       | E. E.   | Kingston.....       | Caldwell.....  |
| Cox, Elza Allison.....          | C. E.   | Rutledge.....       | Scotland.....  |
| Hansen, Karl Henry.....         | E. E.   | Halem.....          | Clay.....      |
| Hogan, Charles William, Jr..... | "       | St. Louis City..... | .....          |
| Jones, Edward Horace.....       | C. E.   | Parnell.....        | Nodaway.....   |
| Lewis, Loyd.....                | E. E.   | Oregon.....         | Holt.....      |
| Marbut, Thomas Benton.....      | C. E.   | McDowell.....       | Barry.....     |
| Maughmer, Carl.....             | "       | Kearney.....        | Clay.....      |
| Moore, Frank Lawrence.....      | "       | Carthage.....       | Jasper.....    |
| Turner, Orville Hume.....       | E. E.   | Hallsville.....     | Boone.....     |
| Turner, William Henry.....      | C. E.   | Centralia.....      | ".....         |
| Weakley, Floyd Lee.....         | M. E.   | Gowen.....          | Clinton.....   |

-8

-13

|                                 |       |                     |                 |
|---------------------------------|-------|---------------------|-----------------|
| SOPHOMORE CLASS.                |       |                     |                 |
| Brandt, Albert Upp.....         | E. E. | Nevada.....         | Vernon.....     |
| Corrigan, George Washington...  | C. E. | Harrisonville...    | Cass.....       |
| Forman, James Edwin.....        | E. E. | Hannibal.....       | Marion.....     |
| Franz, Walter Godfrey.....      | M. E. | St. Louis City..... | .....           |
| Freudenberger, Wm. Kaiser...    | E. E. | Clarksburg.....     | Moniteau.....   |
| Irvine, George Andrew.....      | "     | Marshall.....       | Saline.....     |
| Keith, Charles Whiteside.....   | C. E. | St. Louis City..... | .....           |
| Langford, Chatham Ewing.....    | E. E. | Lexington.....      | Lafayette.....  |
| Maitland, George Forrest.....   | C. E. | Richmond.....       | Ray.....        |
| Morris, James Washington.....   | "     | .....               | .....           |
| Morse, Henry Simmons.....       | M. E. | Warrenton.....      | Warren.....     |
| Neville, Colonel Will Jackson.. | C. E. | Marshall.....       | Saline.....     |
| Pinkley, Roy Henry.....         | E. E. | Chillicothe.....    | Livingston..... |
| Ragland, John Kelly.....        | M. E. | Boonville.....      | Cooper.....     |
| Robinson, Ralph Waldo.....      | E. E. | Kahoka.....         | Clark.....      |
| Rodgers, James Leigh.....       | M. E. | Boonville.....      | Cooper.....     |
| Terrill, Adolphus Centimus....  | C. E. | Macon.....          | Macon.....      |

-17



| Name.                         | Course. | Postoffice.         | County.            |
|-------------------------------|---------|---------------------|--------------------|
| FRESHMAN CLASS.               |         |                     |                    |
| Bickley, Ross Moore.....      | M. E.   | Mexico.....         | Audrain.....       |
| Blackwell, Paul Alexander.... | C. E.   | Columbia.....       | Boone.....         |
| Bowen, Wilks.....             | E. E.   | Mt. Washn., Md..... | Cape Girardeau..   |
| Daugherty, Bede Allen.....    | C. E.   | Leemon.....         | Cole.....          |
| Decker, Ernest William.....   | E. E.   | Jefferson City....  | Saline.....        |
| Gaines, Edward C.....         | "       | Slater.....         | Boone.....         |
| Gans, Roy Carl.....           | "       | Columbia.....       | Pettis.....        |
| Garrett, Richard Montgomery.  | C. E.   | Sedalia.....        | Boone.....         |
| Heck, Kirby Scott.....        | E. E.   | Columbia.....       | Jackson.....       |
| Hill, Jo Lisle.....           | M. E.   | Independence....    | Boone.....         |
| Jeffries, Paul Burch.....     | E. E.   | Shaw.....           | Ste. Genevieve..   |
| Lanning, John Henry.....      | C. E.   | Ste. Genevieve....  | Jackson.....       |
| Lyman, Forest Shepherd.....   | E. E.   | Westport.....       | Moniteau.....      |
| McLay, Edgar Glenn.....       | C. E.   | Tipton.....         | Buchanan.....      |
| Marshall, Urban Serenus.....  | E. E.   | St. Joseph.....     | Juticalpa.....     |
| Melara, Policaspò.....        | C. E.   | Cent. America..     | Boone.....         |
| O'Rear, Lenoir Wilkes.....    | E. E.   | Columbia.....       | Holt.....          |
| Peper, Elmer Carl.....        | "       | St. Louis City....  | Lineville, Ia..... |
| Shellenberger, Ira Oscar..... | "       | Mound City.....     | Columbia.....      |
| Underhill, Dillen.....        | M. E.   | Lineville, Ia.....  | Boone.....         |
| Wilcox, Frank Leslie.....     | E. E.   | Columbia.....       | Audrain.....       |
| Wilson, James Newton.....     | M. E.   | Molino.....         | Lafayette.....     |
| Worley, John Stephen.....     | C. E.   | Odessa.....         |                    |

—23

## D. SCHOOL OF MINES.

| Name.                          | Postoffice.          | County.            |
|--------------------------------|----------------------|--------------------|
| SENIOR CLASS.                  |                      |                    |
| Anderson, Perry Barton.....    | Neosho.....          | Newton.....        |
| Cameron, John Simpson.....     | Krebs, I. T.....     | Phelps.....        |
| Dean, George Walter.....       | Elk Prairie.....     | Phelps.....        |
| Eardley, Albert Edward.....    | Carrizo Spgs, Tex.   | St. Louis City.... |
| Kersting, Felix.....           | St. Louis City....   | Bevier.....        |
| Rogers, John.....              | Bevier.....          | Macon.....         |
| Spengler, Albert.....          | Kansas City.....     | Jackson.....       |
| Torrence, Leslie Clay.....     | Pocahontas.....      | Phelps.....        |
| JUNIOR CLASS.                  |                      |                    |
| Barker, Ralph.....             | Chicago, Ill.....    | Phelps.....        |
| Beyer, Frank Bean.....         | Philadelphia, Pa..   | Phelps.....        |
| Donnelly, Arthur Thomas.....   | Rolla.....           | Polk.....          |
| Gottschalk, Victor Hugo.....   | St. Louis City....   | Davless.....       |
| Hendricks, James Otto.....     | Bolivar.....         | Johnson.....       |
| Larsh, Paul Armstrong.....     | Neb. City, Neb.....  | Cape Girardeau..   |
| Lockridge, George William..... | Jamesport.....       |                    |
| Smith, George Washington.....  | Rockford, Ill.....   |                    |
| Terrell, Arthur Davis.....     | Holden.....          |                    |
| Torrence, Euart Carl.....      | Pocahontas.....      |                    |
| SOPHOMORE CLASS.               |                      |                    |
| Bowman, Wade Walbridge.....    | Lebanon.....         | Laclede.....       |
| Cardenas, Francisco.....       | Salinas Vict., Mex.  |                    |
| Chamberlain, Santiaga.....     | Monterey, Mex.....   |                    |
| Clark, George Clough.....      | Leadville, Colo....  |                    |
| Coe, Herbert William.....      | Kansas City.....     |                    |
| Fernandez, Abraham.....        | Monterey, Mex.....   |                    |
| Hatchett, Roger Hanson.....    | New Florence.....    |                    |
| Illinski, Alexis Xaxier.....   | East St. Louis, Ill. |                    |

—10.



| Name.                           | Postoffice.                         | County.       |
|---------------------------------|-------------------------------------|---------------|
| Jamison, Claude Eagan .....     | Rolla .....                         | Phelps .....  |
| Leivy, Pasha Benjamin .....     | East St. Louis, Ill. ....           | .....         |
| Lund, Albert Edward .....       | White Oaks, N. M. ....              | .....         |
| Perkins, Edward Thompson .....  | Kansas City .....                   | Jackson ..... |
| Perkins, Fred. Hough .....      | " .....                             | " .....       |
| Rogers, Austin Flint .....      | " .....                             | " .....       |
| Rogers, Herbert Fordyce .....   | Holden .....                        | Johnson ..... |
| Schultze, Herman Otto .....     | Vetschau, Ger. ....                 | .....         |
| Soest, Walter Ernest .....      | Rolla .....                         | Phelps .....  |
| Tayman, Francis Joseph .....    | Lebanon .....                       | Laclede ..... |
| Underwood, Jerrold Roscoe ..... | Kansas City .....                   | Jackson ..... |
| Villareal, Francisco .....      | Salinas Victoria,<br>[Mexico] ..... | .....         |

## FRESHMAN CLASS.

—20

|                                    |                      |                      |
|------------------------------------|----------------------|----------------------|
| Bantley, Charles Herman .....      | Lebanon .....        | Laclede .....        |
| Baughman, Claude Griffe .....      | Rolla .....          | Phelps .....         |
| Bland, Harry Osmond .....          | " .....              | " .....              |
| Cooney, Robert Emmett .....        | Ft. Smith, Ark. .... | .....                |
| Cope, Ralph Pope .....             | Kingston .....       | Caldwell .....       |
| Diffenderfer, John Laughton .....  | Lebanon .....        | Laclede .....        |
| Elizondo, Julian .....             | Monterey, Mex. ....  | .....                |
| Fach, Charles Albert .....         | St. Louis City ..... | .....                |
| Fayant, Clarence Howell .....      | Lebanon .....        | Laclede .....        |
| Fraizer, Isaac Peter .....         | Rolla .....          | Phelps .....         |
| Garcia, John Adrian .....          | St. Louis City ..... | .....                |
| Graeser, Henry Jacob .....         | Stratmann .....      | St. Louis .....      |
| Herndon, James Archibald .....     | Lebanon .....        | Laclede .....        |
| Hull, John Stanley .....           | Hamilton, O. ....    | .....                |
| Jurden, Ralph Louis .....          | Holden .....         | Johnson .....        |
| Koeberlin, Frederick Richard ..... | St. Louis City ..... | .....                |
| McComb, Ernest Hubert .....        | Lebanon .....        | Laclede .....        |
| McCormick, William Roland .....    | Gunnison, Colo. .... | .....                |
| McLane, Robert .....               | Oak Ridge .....      | Cape Girardeau ..... |
| Mitchell, Phelps .....             | Rolla .....          | Phelps .....         |
| Niles, Claude Asa .....            | " .....              | " .....              |
| Ollis, Frederick Weld .....        | Springfield .....    | Greene .....         |
| Phariss, Bertie Lewis .....        | Rolla .....          | Phelps .....         |
| Powell, Walbridge Henry .....      | " .....              | " .....              |
| Regel, Ferdinand Hermann .....     | St. Louis City ..... | .....                |
| Taylor, Howard .....               | Lentner .....        | Shelby .....         |
| Tetley, William Robert .....       | Farmington .....     | St. Francois .....   |
| Trotter, James .....               | Carrollton .....     | Carroll .....        |
| Walker, Dix .....                  | Oak Ridge .....      | Cape Girardeau ..... |
| Welgel, William Melvin .....       | Memphis, Tenn. ....  | .....                |
| Wesseler, William Julius .....     | St. Louis City ..... | .....                |

—31

## SPECIAL\*.

|  |                         |                 |
|--|-------------------------|-----------------|
| Beall, Sarah (Math.) .....                           | Kansas City .....       | Jackson .....   |
| Brown, Oliver W. (Met) .....                         | Indianapolis, Ind. .... | .....           |
| [B. S., Earlham; A. M., Ind. Univ.]                  |                         |                 |
| Chamberlain, Louis John (C) .....                    | Rolla .....             | Phelps .....    |
| Fort, Edward Long (A) .....                          | " .....                 | " .....         |
| Green, Albert Edgar (A) .....                        | Chicago, Ill. ....      | .....           |
| Groves, Virgil Pitzer (Min.) .....                   | Springfield .....       | Greene .....    |
| Hanley, John Alexander Jr. (Min.) .....              | Clayton .....           | St. Louis ..... |
| Herzinger, John Adam (S) .....                       | Lake City, Col. ....    | .....           |
| Hutchison, David Love (A), C. E.,<br>Iowa Univ. .... | Florence, Col. ....     | .....           |
| Hutchison, J. A., (A) .....                          | Ames, Iowa .....        | .....           |
| Kerr, William Christian (A) .....                    | St. Louis City .....    | .....           |
| Kirby, R. F. (A) .....                               | Deadwood, S. D. ....    | .....           |
| Knapp, Theron Lorenzo (Eng.) .....                   | Rolla .....             | Phelps .....    |
| Knight, Stanley Marlon (A) .....                     | Chicago, Ill. ....      | .....           |

\*Eng.—Engineering. El.—Electricity. C.—Chemistry. A.—Assaying.  
Min.—Mineralogy. Met.—Metallurgy. Math.—Mathematics. S.—Survey-  
ing.

| Name.                                    | Postoffice.           | County.             |
|--|-----------------------|---------------------|
| Mitchell, Gordon Foote (A).....          | Keithsburg, Ill.....  |                     |
| Norman, Samuel (A).....                  | St. Louis City.....   |                     |
| Otter, J. (A) (A. B., Holy Ghost Col.).. | Jennings, Kan.....    |                     |
| Paterson, Harry (C & A).....             | Newport, Ky.....      |                     |
| Phillips, Daniel (A).....                | Capioma, Kan.....     |                     |
| Schulze, Victor Eugen (Eng.).....        | Vetschau, Germ'y..... |                     |
| Shimin, Edward Wheeler (A).....          | Rolla.....            | Phelps.....         |
| Williams, Samuel Daugherty (S).....      | Jackson.....          | Cape Girardeau..... |
| Wilkins, Elinor Matilda (Math.).....     | Rolla.....            | Phelps.....         |
| —23                                      |                       |                     |
| ACADEMIC.                                |                       |                     |
| Cooper, Charles Noble.....               | Veasman.....          | Maries.....         |
| Curtis, Leslie Virgil.....               | Lecoma.....           | Dent.....           |
| Ferrell, Houston Everett.....            | Lois.....             | Maries.....         |
| Gonzalez, Eduardo.....                   | Monterey, Mex.....    |                     |
| Harrison, Edmund Carroll.....            | Rolla.....            | Phelps.....         |
| Holt, John Jordan.....                   | St. Louis City.....   |                     |
| Johnson, William.....                    | Rolla.....            | Phelps.....         |
| Millard, Anna Reed.....                  | ".....                | ".....              |
| Rolufs, Rulof Theodore.....              | Vest.....             | ".....              |
| Shaw, Hiram Miller.....                  | Rolla.....            | ".....              |
| Southgate, Don.....                      | ".....                | ".....              |
| Westcott, Edith May.....                 | Westcott.....         | ".....              |
| —12                                      |                       |                     |

## Summer School of Science.

(B=Biology, C=Chemistry, P=Physics, P-G=Physical Geography, Phys=Physiology.)

| Name.                          | Studies. | Postoffice.         | County.         |
|--------------------------------|----------|---------------------|-----------------|
| Allen, Edward T.....           | B        | Columbia.....       | Boone.....      |
| Arthur, S. Irvin.....          | B&P      | Union City, Ind..   |                 |
| Bailey, Frank Meeker.....      | B        | Warrensburg.....    | Johnson.....    |
| Bass, Eli Everett.....         | B&P      | Greenville, Miss..  |                 |
| Baxter, Mrs. Ellen C.....      | P        | St. Louis City..... |                 |
| Bond, Judson Baker.....        | P        | Columbia.....       | Boone.....      |
| Bradley, Emma.....             | B&P      | Montezuma, Iowa     |                 |
| Brandon, Sylvester W.....      | B&P      | Trenton.....        | Grundy.....     |
| Branstetter, Daisy.....        | P-G      | Vandalia.....       | Audrain.....    |
| Broaddus, Lycurgus C.....      | B        | Moberly.....        | Randolph.....   |
| Bulkley, Henrietta.....        | P        | Higginsville.....   | Lafayette.....  |
| Campbell, Jefferson Davis..... | B        | Towry City.....     | St. Clair.....  |
| Cauthorn, Edward Beauford..... | P        | Columbia.....       | Boone.....      |
| Clark, Manual Thomas.....      | P        | ".....              | ".....          |
| Cochel, Mary Alice.....        | Phys.    | ".....              | ".....          |
| Cochel, Ella Amanda.....       | Phys.    | ".....              | ".....          |
| Cofer, James Lewis.....        | B        | Robertsville.....   | Franklin.....   |
| Coffing, Lewis Riley.....      | B&P      | Columbia.....       | Boone.....      |
| Conley, William T.....         | B&P      | ".....              | ".....          |
| Davault, Samuel Morris.....    | B        | Cuba.....           | Crawford.....   |
| Duffie, Warren Mitchell.....   | B&P      | Macon.....          | Macon.....      |
| Dunlap, Nellie.....            | B        | Chillicothe.....    | Livingston..... |
| Eitzen, Meta.....              | B&P      | Washington.....     | Franklin.....   |
| Evans, Edwin Elgin.....        | B&Phys   | Columbia.....       | Boone.....      |
| Evarts, Minnie.....            | B        | St. Louis City..... |                 |
| Garrett, Linneus M.....        | P        | New Florence.....   | Montgomery..... |
| Graves, Lula.....              | B        | Woodlandville.....  | Boone.....      |
| Griffith, Mary Ellen.....      | Phys.    | Kirkwood.....       | St. Louis.....  |
| Hanzen, Lydia.....             | P        | Jefferson City..... | Cole.....       |
| Hicklin, Fannie C.....         | B        | New London.....     | Ralls.....      |
| Heninger, Ella.....            | Ph&P-G   | Pawnee.....         | Harrison.....   |
| Holland, Alice Elizabeth.....  | B&P      | Columbia.....       | Boone.....      |
| House, Jesse Eugene.....       | Phys.    | Kimball, S. D.....  |                 |

## SUMMER SCHOOL OF SCIENCE—Continued.

|                                 |        |                           |                  |
|---------------------------------|--------|---------------------------|------------------|
| House, Robert Emerson.....      | Phys.  | Columbia.....             | Boone.....       |
| Hunt, Jacob.....                | P      | Strother.....             | Monroe.....      |
| Iiams, Dora Estelle.....        | P      | Columbia.....             | Boone.....       |
| Jackson, Clarence Martin.....   | P      | Martinstown.....          | Putnam.....      |
| Johnson, William Henry.....     | P      | Hickman Mills.....        | Jackson.....     |
| Jones, Mrs. Belinda Nowlin..... | Phys.  | Olney.....                | Lincoln.....     |
| Keller, John Christian.....     | B      | Union.....                | Franklin.....    |
| Kirkpatrick, Harry E.....       | B      | Newcomer.....             | Chariton.....    |
| Leist, Mary.....                | P      | Higginsville.....         | Lafayette.....   |
| Loeb, Clarence.....             | Phys.  | Columbia.....             | Boone.....       |
| McCormick, James William.....   | Ph&P-G | Chillicothe.....          | Livingston.....  |
| McCullough, Howard Reno.....    | P      | Kossuth, Iowa.....        | Boone.....       |
| Maddox, Joseph Shelby.....      | B&P    | Long Branch.....          | Monroe.....      |
| Maloney, John Cornelius.....    | Phys.  | Cretcher.....             | Saline.....      |
| Mann, Hugh Ballard.....         | B&P    | Craig.....                | Holt.....        |
| May, David W.....               | Phys.  | Garver.....               | Clinton.....     |
| Monoloney, John Storan.....     | B      | St. Louis City.....       | Franklin.....    |
| Montague, Edith.....            | B      | Gray's Summit.....        | Franklin.....    |
| Moore, Glp.....                 | B      | New Palestine.....        | Cooper.....      |
| Moore, Joseph Rockefeller.....  | B      | Union.....                | Franklin.....    |
| Munday, Bert.....               | B      | Canton.....               | Lewis.....       |
| Owen, Fred Benjamin.....        | P      | Clinton.....              | Henry.....       |
| Peeler, William Barney.....     | B&P    | White's Store.....        | Howard.....      |
| Phillips, Silas Bent.....       | P      | St. Louis City.....       | Greene.....      |
| Potter, Peter.....              | B      | Springfield.....          | Shelby.....      |
| Rhodes, Sallie Landon.....      | B      | Maud.....                 | Boone.....       |
| Rocheford, Julia.....           | P-G&P  | Shaw.....                 | Boone.....       |
| Rocheford, Rose Ella.....       | P-G    | ".....                    | ".....           |
| Rogers, Henry.....              | P      | Strother.....             | Monroe.....      |
| Salmon, Kate Letcher.....       | P      | Tarkio.....               | Atchison.....    |
| Scrivener, Douglas Scott.....   | Phys.  | Columbia.....             | Boone.....       |
| Steele, Mary Isabelle.....      | B&P    | Culvre.....               | Audrain.....     |
| Stoker, Dee Antonio.....        | B&P    | Clinton.....              | Henry.....       |
| Strickler, Nana.....            | B      | Columbia.....             | Boone.....       |
| Tillman, Herman.....            | B      | Loose Creek.....          | Osage.....       |
| VanNeman, Lula.....             | B&Phys | Carthage.....             | Jasper.....      |
| Walters, William Wade.....      | P-G&P  | ".....                    | ".....           |
| Walters, Francis M.....         | Phys.  | Warrensburg.....          | Johnson.....     |
| Watson, Sophia.....             | B      | Waverly, Ill.....         | ".....           |
| Wauchope, Joseph A.....         | B&Phys | Hampden-Sidney<br>Va..... | ".....           |
| Wayland, John Green.....        | P      | Salisbury.....            | Chariton.....    |
| Weatherly, James Edward.....    | B      | Columbia.....             | Boone.....       |
| Williams, David Edgar.....      | B&P    | Conway.....               | Laclede.....     |
| Williams, Susannah P.....       | P      | Kirkwood.....             | St. Louis.....   |
| Wise, Mary Nona.....            | B      | Wentzville.....           | St. Charles..... |
| Wood, Walter Fountain.....      | B      | California.....           | Moniteau.....    |
| Wright, Mary Alice.....         | Phys.  | Columbia.....             | Boone.....       |

—80

## SUMMARIES.

## I. Enrollment in Academic Studies.

|                                    |     |                             |     |
|------------------------------------|-----|-----------------------------|-----|
| <i>(a) Columbia:</i>               |     |                             |     |
| English.....                       | 258 | Mathematics.....            | 216 |
| Latin.....                         | 143 | Astronomy.....              | 17  |
| Greek.....                         | 72  | Physics.....                | 149 |
| Classical Archæology.....          | 37  | Chemistry.....              | 181 |
| Romance Languages.....             | 151 | Geology and Mineralogy..... | 80  |
| Germanic Languages.....            | 185 | Biology.....                | 144 |
| History and Political Economy..... | 133 | Elocution.....              | 102 |
| Philosophy.....                    | 68  |                             |     |
| <i>(b) Rolla:</i>                  |     |                             |     |
| Mathematics.....                   | 90  | English.....                | 39  |
| Chemistry.....                     | 78  | Modern Languages.....       | 39  |
| Physics.....                       | 74  |                             |     |

## II. Enrollment in Technical Studies.

|                             |     |                                 |     |
|-----------------------------|-----|---------------------------------|-----|
| <i>(a) Columbia:</i>        |     |                                 |     |
| Bacteriology .....          | 20  | Physiology .....                | 35  |
| Drawing .....               | 77  | Entomology .....                | 35  |
| Shop-work .....             | 123 | Book-keeping and Stenography .. | 71  |
| Veterinary Science .....    | 29  | Horticulture .....              | 44  |
| Agriculture .....           | 63  | Pathology .....                 | 101 |
| <i>(b) Rolla:</i>           |     |                                 |     |
| Drawing .....               | 67  | Chemical Laboratory .....       | 78  |
| Shop-work .....             | 34  | Engineering .....               | 73  |
| Mining and Metallurgy ..... | 39  |                                 |     |

## III. Enrollment in Departments.

|                                       |     |                                     |     |
|---------------------------------------|-----|-------------------------------------|-----|
| I. ACADEMIC:                          |     | VII. A. AND M. COLLEGE,             |     |
| Graduates .....                       | 17  | <i>(a) Agriculture:</i>             |     |
| Seniors .....                         | 32  | Fourth Year .....                   | 3   |
| Juniors .....                         | 46  | Third Year .....                    | 3   |
| Sophomores .....                      | 66  | Second Year .....                   | 7   |
| Freshmen .....                        | 81  | First Year .....                    | 26  |
| Specials .....                        | 36  | Specials .....                      | 3   |
| Irregular .....                       | 6   | Short Course (Agriculture) .....    | 21  |
| Total .....                           | 283 | Short Course (Horticulture) .....   | 11  |
| II. NORMAL:                           |     | Total .....                         | 74  |
| Regular .....                         | 33  | <i>(b) Mechanic Arts .....</i>      |     |
| Teachers .....                        | 24  | <i>(c) Engineering:</i>             |     |
| Total .....                           | 57  | Seniors .....                       | 8   |
| III. LAW:                             |     | Juniors .....                       | 13  |
| Seniors .....                         | 65  | Sophomores .....                    | 17  |
| Juniors .....                         | 64  | Freshmen .....                      | 23  |
| Specials .....                        | 4   | Total .....                         | 61  |
| Total .....                           | 133 | <i>(d) School of Mines (Rolla):</i> |     |
| IV. MEDICAL .....                     |     | Seniors .....                       | 8   |
| V. MILITARY SCIENCE AND TACTICS ..... |     | Juniors .....                       | 10  |
| VI. ELOCUTION .....                   |     | Sophomores .....                    | 20  |
|                                       |     | Freshmen .....                      | 31  |
|                                       |     | Specials .....                      | 23  |
|                                       |     | Academics .....                     | 12  |
|                                       |     | Total .....                         | 104 |

## IV. Enrollment in Academic Courses.

|                  | A. | B. | B. L. | B. S. |
|------------------|----|----|-------|-------|
| Seniors .....    | 11 | 16 | 5     |       |
| Juniors .....    | 20 | 19 | 7     |       |
| Sophomores ..... | 21 | 29 | 16    |       |
| Freshmen .....   | 22 | 34 | 25    |       |
| Totals .....     | 74 | 98 | 53    |       |

## V. Enrollment in Engineering Courses.

| (a) Columbia:               |    | (b) Rolla:                    |    |
|-----------------------------|----|-------------------------------|----|
| Civil Engineering .....     | 24 | Mining Engineering .....      | 35 |
| Mechanical Engineering..... | 10 | Civil Engineering .....       | 22 |
| Electrical Engineering..... | 25 | Chemistry and Metallurgy..... | 12 |
|                             |    | Special.....                  | 23 |

## VI. Students Working in Gymnasium.

|                |     |                  |   |
|----------------|-----|------------------|---|
| Young Men..... | 100 | Young Women..... | 6 |
|----------------|-----|------------------|---|

## VII. Young Men and Young Women.

| (a) Columbia:                      |     |                           |     |
|------------------------------------|-----|---------------------------|-----|
| Regular Session:                   |     | Summer School of Science: |     |
| Young Men.....                     | 57  | Young Men.....            | 50  |
| Young Women.....                   | 94  | Young Women.....          | 30  |
| (b) Rolla:                         |     |                           |     |
| Men.....                           | 100 | Women .....               | 4   |
| Total, Young Men.....              | 677 | Total, Young Women.....   | 128 |
| Number of Individual Students..... |     | 805                       |     |

## VIII. Total Enrollment.

|   |     |
|---|-----|
| Academic.....                             | 286 |
| Law.....                                  | 133 |
| Medical.....                              | 52  |
| Normal.....                               | 53  |
| A. & M. College: 1. Agriculture.....      | 63  |
| 2. Horticulture.....                      | 11  |
| 3. Engineering.....                       | 61  |
| 4. School of Mines.....                   | 104 |
| Summer School of Science.....             | 239 |
| Total.....                                | 80  |
| Total.....                                | 834 |
| Names counted twice.....                  | 29  |
| Total number of individual students ..... | 805 |
| Total number at Columbia.....             | 701 |
| Total number at Rolla.....                | 104 |

## IX. Counties Represented in the University.

|                |     |                     |    |
|----------------|-----|---------------------|----|
| Adair.....     | 4   | Butler.....         | 0  |
| Andrew.....    | 2   | Caldwell.....       | 10 |
| Atchison.....  | 4   | Callaway.....       | 7  |
| Audrain.....   | 13  | Camden.....         | 0  |
| Barry.....     | 2   | Cape Girardeau..... | 13 |
| Barton.....    | 8   | Carroll.....        | 7  |
| Bates.....     | 6   | Carter.....         | 0  |
| Benton.....    | 1   | Cass.....           | 7  |
| Bollinger..... | 0   | Cedar.....          | 1  |
| Boone.....     | 174 | Chariton.....       | 6  |
| Buchanan.....  | 10  | Christian.....      | 0  |

## COUNTIES REPRESENTED IN THE UNIVERSITY—Continued.

|                  |    |                                      |    |
|------------------|----|--------------------------------------|----|
| Clark.....       | 1  | Morgan .....                         | 4  |
| Clay.....        | 7  | New Madrid.....                      | 5  |
| Clinton.....     | 9  | Newton .....                         | 1  |
| Cole.....        | 9  | Nodaway.....                         | 4  |
| Cooper.....      | 9  | Oregon .....                         | 0  |
| Crawford.....    | 5  | Osage .....                          | 1  |
| Dade.....        | 1  | Ozark.....                           | 3  |
| Dallas.....      | 1  | Pemiscot.....                        | 1  |
| Davies.....      | 4  | Perry.....                           | 1  |
| DeKalb.....      | 2  | Pettis.....                          | 21 |
| Dent.....        | 4  | Phelps.....                          | 23 |
| Douglas.....     | 0  | Pike .....                           | 9  |
| Dunklin.....     | 0  | Platte.....                          | 1  |
| Franklin.....    | 8  | Polk .....                           | 1  |
| Gasconade.....   | 1  | Pulaski.....                         | 4  |
| Gentry.....      | 6  | Putnam.....                          | 5  |
| Greene.....      | 8  | Ralls .....                          | 3  |
| Grundy.....      | 5  | Randolph.....                        | 9  |
| Harrison.....    | 5  | Ray.....                             | 12 |
| Henry.....       | 6  | Reynolds.....                        | 0  |
| Hickory.....     | 0  | Ripley .....                         | 0  |
| Holt.....        | 7  | St. Charles.....                     | 7  |
| Howard.....      | 4  | St. Clair.....                       | 5  |
| Howell.....      | 1  | St. Francois.....                    | 5  |
| Iron.....        | 1  | Ste. Genevieve.....                  | 2  |
| Jackson.....     | 27 | St. Louis.....                       | 8  |
| Jasper.....      | 15 | Saline.....                          | 21 |
| Jefferson.....   | 6  | Schuyler.....                        | 3  |
| Johnson.....     | 6  | Scotland.....                        | 2  |
| Knox.....        | 1  | Scott .....                          | 3  |
| Laclede.....     | 8  | Shannon.....                         | 0  |
| Lafayette.....   | 14 | Shelby.....                          | 8  |
| Lawrence.....    | 3  | Stoddard.....                        | 0  |
| Lewis.....       | 5  | Stone .....                          | 0  |
| Lincoln.....     | 8  | Sullivan.....                        | 1  |
| Linn.....        | 9  | Taney.....                           | 0  |
| Livingston.....  | 8  | Texas.....                           | 1  |
| McDonald.....    | 0  | Vernon.....                          | 12 |
| Macon.....       | 10 | Warren.....                          | 2  |
| Madison.....     | 0  | Washington.....                      | 0  |
| Maries.....      | 2  | Wayne.....                           | 0  |
| Marion.....      | 5  | Webster.....                         | 1  |
| Mercer.....      | 0  | Worth.....                           | 1  |
| Miller.....      | 5  | Wright.....                          | 2  |
| Mississippi..... | 0  | City of St. Louis.....               | 26 |
| Moniteau.....    | 12 |                                      |    |
| Monroe.....      | 11 | No. of counties represented, 94.     |    |
| Montgomery.....  | 9  | No. of counties not represented, 20. |    |

## X. States, Territories and Foreign Countries.

|                    |     |                        |   |
|--------------------|-----|------------------------|---|
| Arkansas.....      | 4   | Nebraska.....          | 1 |
| Colorado.....      | 4   | Ohio.....              | 1 |
| Connecticut.....   | 1   | Oregon.....            | 2 |
| Florida.....       | 2   | Pennsylvania.....      | 1 |
| Georgia.....       | 1   | South Dakota.....      | 2 |
| Idaho.....         | 1   | Tennessee.....         | 2 |
| Illinois.....      | 12  | Texas.....             | 7 |
| Indiana.....       | 2   | Virginia.....          | 1 |
| Iowa.....          | 7   | Washington.....        | 1 |
| Kansas.....        | 5   | Indian Territory.....  | 4 |
| Kentucky.....      | 3   | New Mexico.....        | 2 |
| Maryland.....      | 1   | Canada.....            | 1 |
| Massachusetts..... | 1   | Central America.....   | 1 |
| Michigan.....      | 1   | Germany.....           | 2 |
| Minnesota.....     | 1   | Mexico.....            | 6 |
| Mississippi.....   | 1   |                        |   |
| Missouri.....      | 758 | Total represented, 32. |   |



## GRADUATES OF 1896.

---

### (a) COLUMBIA, MISSOURI.

#### I. CERTIFICATES.

##### Department of Military Science and Tactics.

|   |                       |
|---|-----------------------|
| Gurry Huggins, <i>cum laude</i> .           | James Samuel Harrison |
| Clarence Martin Jackson, <i>cum laude</i> . | Leonard Hegnauer, Jr. |
| Robert William Brown.                       | William Casper Hock.  |
| Lisbon Elwood Durham.                       | Roy McFarland.        |
| Raymond Sanfley Edmonds.                    | Leroy Levi Perrine.   |
| Karl Henry Hansen.                          | Thomas Benton Perry.  |
| Joseph Vance Wilhite.                       | Orville Hume Turner.  |

##### Department of Engineering.

###### 1. *In Surveying.*

|                        |                       |
|------------------------|-----------------------|
| Robert Edward Johnson. | Carl Maughmer.        |
| Lewis Loyd.            | William Henry Turner. |

###### 2. *In Electrical Engineering.*

Orville Hume Turner.

##### College of Agriculture and Mechanic Arts.

Alonzo Conduit Lillard.

##### Normal Department.

|                         |                       |
|-------------------------|-----------------------|
| Rosa Delcena Crump.     | Herman Kraemer.       |
| William Boyd Dickinson. | Floyd Sexton.         |
| Stella Fewsmith.        | Margaret Ann Wulfert. |
| Rena Myra Frank.        | Walter Fountain Wood. |
| Henry Herrenleben.      |                       |

#### II. DEGREES.

##### Department of Engineering.

###### 1. *Degree of Bachelor of Science in Civil Engineering (B. S.).*

|                        |                      |
|------------------------|----------------------|
| Frank Spencer Balthis. | Robert Peel Garrett. |
| Lee Highly.            | Curtis Hill.         |
| James William Skelly.  |                      |

###### 2. *Degree of Bachelor of Science in Electrical Engineering (B. S.).*

|                        |                   |
|------------------------|-------------------|
| Thomas Robert Fowler.  | James Curd Hinde. |
| Charles Everett Young. |                   |

###### 3. *Degree of Bachelor of Science in Mechanical Engineering (B. S.).*

Elliott Jeffries Mason.

**Department of Medicine.***Degree of Doctor of Medicine (M. D.).*

|                         |                             |
|-------------------------|-----------------------------|
| James Sanford Barnett.  | William Augustus Gillaspie. |
| Holland Abell Lipscomb. |                             |

**Department of Law.***1. Degree of Bachelor Of Laws (LL. B.)*

|   |                               |
|---|-------------------------------|
| William Sherman Campbell, <i>cum laude.</i> | Homer Allison Harris.         |
|   | Robert Harry Hunter.          |
| Thomas Jefferson Eppes, <i>cum laude.</i>   | Melville Sinclair King.       |
| Joseph Boyce March, <i>cum laude.</i>       | Walter Tazewell LaFollett.    |
| George Joseph Stampfli, <i>cum laude.</i>   | James Hardin Lay.             |
| Edwin Moss Watson, <i>cum laude.</i>        | William Robertson McCandless. |
| William Fuqua Wilkinson, <i>cum laude.</i>  | Alexander McHenry Meadow.     |
| Dick Prigmore Berry.                        | Michael Harry O'Connor.       |
| William Buchholz.                           | Guy Brasfield Park.           |
| Edward Eugene Campbell.                     | Stuart Robinson Price.        |
| William James Carlon.                       | Charles Edgar Prowell.        |
| Carey May Carroll.                          | Henry Cleveland Robinson.     |
| William Thomas Clements.                    | Roy Robert St. John.          |
| Jerry Culbertson.                           | James Calvin Shaner.          |
| Paul Robert Davis.                          | Charles Parson Snell.         |
| Kent Leonard Eldred.                        | Theodore Clifton Sparks.      |
| William Richard Gentry.                     | Earl Miller Taylor.           |
| Bernard Arthur Gow.                         | Wilson Allen Taylor.          |
| William Gray.                               | Kirk Baxter Turner.           |
| Aubrey Rutherford Hammett.                  | Ernest Jackson Westerhouse.   |
| Harry Chambers Hamner.                      | Fred Young.                   |

**College of Agriculture and Mechanic Arts.***1. Degree of Bachelor of Agriculture (B. Agr.)*

|  |                        |
|--|------------------------|
| Thomas Isalah Mairs, <i>cum laude.</i> | Nathaniel Ogden Booth. |
|--|------------------------|

*2. Degree of Master of Agriculture (M. Agr.)*

|   |
|---|
| David William May (B. Agr., Univ. of Mo., '94.) |
|---|

**Normal Department.***Diplomas and Life Certificates.*

|                        |                              |
|------------------------|------------------------------|
| George Thomas Davis.   | Hubbard Kavanaugh Hinde, Jr. |
| Ella Bevans McCutchan. | Virginia Sutherland.         |
| Frank F. Thompson.     |                              |

Academic Department.

1. Degree of Bachelor of Arts (A. B.)

|                                   |  |
|-----------------------------------|--|
| Clarence Loeb, <i>cum laude</i> . | Ignatius McCutchan, <i>cum laude</i> . |
| Charles Emanuel Byers.            | Andrew Jackson Detweiler.              |
| Grace Harrison.                   | Hubbard Kavanaugh Hinde, Jr.           |
| Herman Kraemer.                   | Joseph McCutchan.                      |
| John William Scott.               | Mary Pauline Scott.                    |
| Walter Fountain Wood.             |  |

2. Degree of Bachelor of Science (B. S.)

|                                       |                    |
|---------------------------------------|--------------------|
| Cora Eltzen Defoe, <i>cum laude</i> . | Gail Darwin Allee. |
|---------------------------------------|--------------------|

3. Degree of Bachelor of Letters (B. L.)

|                        |                           |
|------------------------|---------------------------|
| Bruce Barnett.         | George Thomas Davis.      |
| Anne Dillard Hinde.    | William Thomas Jones.     |
| John Franklin Manring. | Ella Bevans McCutchan.    |
| Washington K. Moore.   | Mary Caroline Payne.      |
| Janie Elenora Pollard. | Henry Holcomb Rutherford. |
| Virginia Sutherland.   | Frank F. Thompson.        |
| Nancy Pearl Westlake.  | William Edwin Turner.     |

4. Degree of Master of Arts (A. M.).

|   |
|---|
| Minna A. Kidwell (A. B., Leland Stanford, Jr., Univ., '95). |
| Thomas Jackson Taylor (A. B., Univ. of Chicago, '95).       |

5. Degree of Master of Science (M. S.).

|                    |
|--------------------|
| Cora Eltzen Defoe. |
|--------------------|

6. Degree of Master of Letters (M. L.).

|  |
|--|
| Edward Thorpe Allen (B. L., Univ. of Mo., '94).  |
| Henry Joseph Gerling (B. L., Univ. of Mo., '94). |

III. PRIZES, MEDALS AND SCHOLARSHIPS.

|  |                          |
|--|--------------------------|
| The Dachsels Prize in the Department of Engineering.....   | (Not awarded)            |
| The Prize Essays in the Department of Law—Rights to Land Made by or Resulting from Accretion, Reliction, and Avulsion: |                          |
| First.....   | Thomas Jefferson Eppes   |
| Second.....  | William Sherman Campbell |
| The Prize Essay in the Normal Department.....  | (Not awarded)            |
| The Laws Astronomical Medal.....   | (Not awarded)            |
| The McNally Medal.....   | (Not awarded)            |
| The Stephens Medal for Oratory—The Government and the Citizen.....   |                          |
| .....  | Thomas Jefferson Eppes   |
| The Military Medal.....  | (Not awarded)            |

|   |                          |
|---|--------------------------|
| The Military Cup.....   | (Not awarded)            |
| The James S. Rollins Scholarship, Department of Engineering.....    |                          |
| .....   | Thomas Jacobs Rodhouse   |
| The James S. Rollins Scholarship, Department of Medicine.....       |                          |
| .....   | Robert Lee Reid          |
| The James S. Rollins Scholarship, Department of Law,.....           |                          |
| .....   | William Detmar Williams. |
| The James S. Rollins Scholarship, College of Agriculture,.....      |                          |
| .....   | Alonzo James Sears.      |
| The James S. Rollins Scholarship, Academic Department, A. B.,.....  |                          |
| .....   | Irvin Victor Barth       |
| The James S. Rollins Scholarship, Academic Department, B. S., ..... |                          |
| .....   | Bert Munday.             |
| Final Honors in Greek and Romance Languages.....                    |                          |
| .....   | Charles Emanuel Byers.   |

(b) *ROLLA MISSOURI.*

## CERTIFICATES.

*Assaying and Technical Analysis.*

|                       |                         |
|-----------------------|-------------------------|
| John Simpson Cameron. | Victor Hugo Gottschalk. |
| George Walto Dean.    |                         |

*Mathematics.*

|                        |                 |
|------------------------|-----------------|
| Perry Barton Anderson, | Felix Kersting. |
| John Simpson Cameron,  |                 |

*Surveying.*

|                        |                           |
|------------------------|---------------------------|
| Perry Barton Anderson. | George William Lockridge. |
| John Simpson Cameron.  | Arthur Davis Terrell.     |
| Felix Kersting.        |                           |

## DIPLOMAS OF GRADUATION IN ACADEMIC COURSE.

|                           |                         |
|---------------------------|-------------------------|
| Sylvia Burgher.           | Jessie Miller Via.      |
| Grace Serepta Richardson. | Elinor Matilda Wilkins. |

## DEGREES.

*Bachelor of Science (in Mining Engineering.)*

Walter Guy Martin (B. S., Perdue University, '95).

*Engineer of Mines.*

Claude Devlin Grove (B. S., Missouri School of Mines, '94).

# APPENDIX I.

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## SUMMER SCHOOLS.

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### A. SUMMER SCHOOL OF SCIENCE—THIRD SESSION.

#### STAFF OF INSTRUCTORS.

M. L. LIPSCOMB, of the University,  
*Principal.*

GEORGE W. KRALL, of the Manual Training School, St. Louis,  
*Teacher of Physics.*

HOWARD AYRES, of the University,  
*Teacher of Biology.*

C. M. JACKSON, of Columbia Academy,  
*Teacher of Biology.*

E. J. MASON, of the University,  
*Teacher of Drawing and Shopwork.*

JOHN C. WHITTEN, of the University,  
*Teacher of Horticulture.*

JOHN M. STEDMAN, of the University,  
*Teacher of Horticulture.*

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There will be in the University of the State of Missouri, at Columbia, during the summer of 1897, a School of Science, in which laboratory courses of six weeks each will be given in Biology, Physics, and, if there is sufficient demand, possibly in Chemistry. There will be auxiliary courses also in Drawing and Shopwork and in Horticulture.

These courses will be strictly for the benefit of those who are or who expect to be teachers. None of the work will be recognized as leading to any degree in the University. This is an excellent opportunity for teachers to

prepare themselves to fill the positions which will be created in considerable number by the requirement by the University of laboratory instruction in the sciences for admission to the freshman class. The superintendents and teachers of the district schools and of private schools also are cordially invited to come, but we especially recommend that the principals and teachers of high schools promptly seize this opportunity.

The age demands laboratory methods, and no teacher is competent to conduct laboratory exercises who has not himself previously done the work successfully. The introduction of this method in teaching is perhaps the greatest contribution to sound pedagogy that has been made in the latter half of the century. The spirit of the method is entering with highly beneficial results into the teaching of all subjects. It greatly improves the general teaching in a high school to introduce, under a thoroughly competent teacher, a good laboratory of science. The result is quickly felt in the teaching of other subjects.

Special attention will be directed to the details of laboratory equipment, the purchase of supplies, the care of apparatus, and to showing how to do the work with simple and inexpensive appliances. Accordingly much care will be given to the following things: In Biology, to the collection and preservation of the necessary material, both animals and plants; in Physics, to the construction of simple but useful pieces of home-made apparatus; and in Chemistry (should the course be given) to the equipment of laboratories where gas and running water are not available. We shall try to show *just how with suitable equipment from twenty to twenty five pupils can best be carried forward together through a year's good work in the elements of these sciences.*

That this may be properly shown, all persons will be graded as *beginners*, without regard to their experience in teaching or their attainments in science. The object is not so much to teach the facts of science as to show *how science should be taught.* In Physics it will be assumed that the students have some knowledge of Algebra and Plane Geometry. The apparatus employed will be precisely that which we advise high schools to buy, and an effort will be made to show that with a comparatively inexpensive equipment excellent teaching may be done, provided that the teacher be thoroughly qualified.

No student will be allowed to take work in more than one laboratory at a time. But those who finish first the course in Biology may afterwards take that in Physics or Chemistry. The minimum time required in each laboratory will be five hours a day—thirty hours a week. Teachers that take Biology may take after 4 p. m. the auxiliary course in Shopwork and Drawing, and those that take Physics may add thereto after 4 p. m. the auxiliary course in Horticulture.

Certificates will be given only to those who devote the whole term of six weeks to the laboratory selected and pass a satisfactory examination on the subject matter as well as on the methods.



It will scarcely be questioned that in sound education the training of the industrial and the intellectual faculties should be combined. It is not reasonable that pupils in our rural schools should in years be taught a multitude of things and get not even an elementary knowledge of soils, plants and vegetable nutrition. It is so easy with modest equipment and a slight expenditure of time to impart respectable skill in the handling of tools that there is no justification for not teaching handicraft in the district schools in the seventh and eighth grades. Every rural school in Missouri should have by it an acre or more of ground as an open air laboratory of experimentation in the elements of Botany and Horticulture; while the school house itself and its grounds should be tastefully adorned with vines, shrubs, and trees. Every school should have even in winter plants of some sort about its windows within. In the management of this plat of ground—what the Germans call the school-garden to distinguish it from the kindergarten, which is a different thing—the rural high schools might attempt more than has been suggested above. Moreover, every good district school, whether in city or in country, and still more, every high school, should have at least one room well lighted and fairly fitted for bench work in wood and in metal. Forges and motive power while useful, are not necessary. A modest equipment for wood carving and for bench work in wood and in metal is inexpensive, and with skillful teachers would be most valuable for the development of boys and girls intellectually as well as industrially. In this connection is called attention to the excellent pages on Industrial Education with which Superintendent Kirk begins the Forty-Seventh Annual Report. Such training is not less valuable for girls than it is for boys.

Accordingly the University offers a course of six weeks in Shop Work and Drawing, beginning May 30 and ending July 10. This course may be taken in addition to that in Biology, for the work will not begin earlier than six o'clock in the afternoon. This course will not be given unless at least ten teachers apply for it, and promise to continue in it for six weeks. The work will not be too severe for ladies. We hope that principals and superintendents of schools male and female will come and test the possibilities of introducing this work into the public schools. It is an experiment in pedagogy, made on pedagogues first, to be followed by similar experiments next winter here and we hope elsewhere on school children. Information will be given as to the essentials and cost of a minimum equipment. Teachers seeking preparation for laboratory work will find this course especially valuable for *developing in them skill to provide home-made apparatus*. The shops of the University have cost, including the building and equipment, over fifty thousand dollars, and good instruction with great success is given annually to more than one hundred students. Undoubtedly, therefore, we have the equipment and the pedagogical skill to train teachers in Shop

Work if they show zeal and perseverance in learning. The University of Oxford, in England, offers a Summer Extension Course in Manual Training.

To test the possibility of teaching Horticulture in the high schools and in the upper grades of the district schools a course for teachers will be offered in Horticulture, beginning July 12 and ending August 21. This course will follow that in Biology and be a practical application of it. Our State University has today a better equipment for teaching Horticulture than can be found anywhere else (except at Shaw's Garden, St. Louis) in the northern half of the Mississippi Valley. In all this territory there is not a State that has equal facilities for good teaching in Horticulture. Within a square of the University campus we have for this purpose thirty-two acres of land with green houses, forcing beds, and the tools and other apparatus for good work, practical and scientific, in Horticulture. We succeed admirably every year in teaching it to a number of students, and feel sure that we shall succeed with the teachers also if they exhibit zeal and determination. This course may be taken in addition to that in Physics. The work will be from four to six in the afternoons four times a week. The crude labor necessary for the preparation of ground, etc., will be furnished by the University. The teachers will be expected to work some with their hands, but only where hand work is indispensable to learning. This course will be accompanied by six lectures in Economic Entomology by Dr. Stedman. A knowledge of the six weeks' course in Biology will be assumed. The instruction will be partly practical, but largely scientific. This course will not be given unless at least ten teachers apply for it and promise to continue in it throughout the six weeks.

This experiment may lead to the introduction of Horticulture, Agriculture, and Handicraft as studies in the schools of Missouri. Handicraft in the common schools has been tried with success in many places in Europe (notably in Sweden), and Agriculture has been tried on a large scale and with fair success in the schools of Canada and of more than one country in Europe. It is hoped that principals and superintendents, both men and women, will attend this course to test its possibilities. It is an experiment in pedagogy made on pedagogues first, to be followed by similar experiments next winter here, and we hope elsewhere, on school children.

Unlike other summer schools, this is not dependent upon fees, but is supported by the University, which bears all of the expenses of instruction, the students contributing thereto nothing except their time and their willingness to learn. Text-books are recommended and the students are referred to them sometimes for fuller statements, but the only work done in the University buildings is *laboratory work*. Where the apparatus which we use in the regular session is different from what we should recommend to the high schools, it is carefully locked up, and we buy for these summer courses precisely the instruments, materials and furniture that we should recommend to the high schools, even though we have in our cases far bet-

ter equipment for our regular University classes. The students are required in Physics, for example, as a part of the course, to make out lists of the apparatus, materials, and furniture necessary for the equipment of a good school laboratory. Where it is better to have the apparatus made at home the exact specifications for its manufacture are copied by every student. Our courses are not given to help our young Instructors to eke out better salaries, but are supported by the University of Missouri for the good of the teachers. We employ the instructors that, in our opinion, are best for this instruction, not confining ourselves to the University corps. A teacher may be admirable for a University, but not suited to this teaching.

#### FEES AND BOARD.

There is no charge for instruction or for use of laboratories and materials.

Good board including room and service may be had in private families in Columbia at from \$3.00 to \$4.50 a week. Washing may be had at from 25 cents to 35 cents a week. If the students choose to organize themselves into a club, the expense of living may be greatly reduced. The University in that event would place at their disposal, rent free, its club houses, which accommodate about one hundred and forty persons. Each room is furnished with a plain bedstead, table, and two chairs. If two persons occupy one room the other furniture absolutely necessary may be bought or rented for the summer for ten or twelve dollars. Table board in these clubs can easily be brought within \$2.00 a week.

Missouri is so far North that teachers from the South would find in the climate here a decided change, while people in our large cities would get here all the comfort of an outing in the country. Columbia is a delightful town of about five thousand inhabitants. Its people are distinguished for their hospitality, culture, and refinement. Teachers in the summer school will have access, during certain hours of the day, to the Library of the University, and it may be possible to give them the use of the Gymnasium and bath rooms also.

#### TIME OF OPENING.

The courses in Biology and Shopwork and Drawing will begin Monday, May 31, 1897 (Commencement Week), and continue six weeks, ending Saturday, July 10. On the following Monday, July 12, the courses in Physics and Horticulture and (if the course should be given) in Chemistry will begin and continue six weeks, ending August 21, 1897.

Teachers that intend to come are earnestly requested to present themselves on the opening day of the course which they expect to attend, and to continue without intermission to the end of that course. Those who are not willing to follow this advice will fail to reap the advantages of these courses.

The State Superintendent of Public Instruction, Hon. John R. Kirk, says: "As a means of exemplifying modern methods of teaching science in secondary schools, I believe the Summer School of Science at the State University to be unsurpassed by any institution in our country; and I hope to see a largely increased attendance at the coming summer session. School principals and superintendents as well as high school science teachers would receive a great intellectual uplift by spending a few weeks in this excellent training school whose purpose is declared to be: not to teach high school science but to *teach teachers how to teach high school science*. This is not done with the fine apparatus used for the advanced University classes; it is done with equipments just such as are now found in several of our best public high school laboratories; and the *making of apparatus is not least among the things exemplified*.

"If there are teachers in any county who desire to attend this school in lieu of the county institute, I recommend that they be released from attendance upon the county institute and be given a special examination by the county commissioner."

Professor F. Louis Soldan, Superintendent of Public Schools, St. Louis, says: "The University is better equipped for science work than any other school in the state, and the advantages which the course of training during vacation offers are unparalleled. I sincerely hope that many teachers in the state will continue to avail themselves of this rare opportunity.

For further particulars, address,

PROFESSOR. M. L. LIPSCOMB,  
COLUMBIA, MO.

## **B. SUMMER SCHOOL IN MATHEMATICS AND LANGUAGES.**

During the summer of 1897, courses of instruction will be offered in French, German, Greek, Latin, and Mathematics.

These summer courses are private enterprises, and in that respect differ from those offered in the Summer School of Science. They are intended (1) to aid University students in making up work in which they have failed or been conditioned, or in which they are behind in their regular Academic courses; (2) to prepare students to meet the higher entrance requirements announced for the fall of 1897 and following years (see pages 41-43); and (3) to afford teachers in district and secondary schools the opportunity of reviewing subjects that they teach, and of gaining suggestions for new methods.

If a student desires credit on the University records for grades made in one or more of these summer courses, he must observe the following rules:

1. The course must be approved by the Professor of the subject that it treats.

2. If it be work that the student has not gone over in some regular University course, he may not, in one summer, make a grade on more than the equivalent of four (4) hours a week for one semester of lecture-room work, or six hours a week of laboratory work, or from four to six hours (at the discretion of the Committee on Summer Work) of work that is in part lecture-room and in part laboratory.

3. If the work be wholly or in part that in which the student has been conditioned or has failed, he may make up, in amount, whatever is approved by the Professor of the subject undertaken and by the Committee on Summer Work.

The amount of the tuition fees is determined in each case by the instructor. If University supplies are used, they must be paid for at the same rate as in the regular session.

Board, with lodging, may be obtained for from \$3.50 to \$4 a week.

#### FRENCH.

1. Elementary Course. *Six weeks, beginning July 12.* Professor Weeks

2. Advanced Course. *Six weeks, beginning July 12.* Professor Weeks.

The fee for each course is \$10, payable in advance.

#### GERMAN.

1. First year's work. *Six weeks, beginning June 7.* Miss Riggs.

2. Second year's work. *Six weeks, beginning June 7.* Miss Riggs.

Other work will be arranged if there is any demand for it.

Tuition for one course, \$10; for two or more, \$15.

#### GREEK.

1. Elementary Greek. *June 7th to July 17th.* Assistant Professor Pickard.

2. Xenophon's Anabasis. *June 7th to July 17th.* Assistant Professor Pickard.

Other courses may be given if a sufficient number apply. For further information apply to Professor W. G. Manly.

#### LATIN.

1. Livy and Tacitus. Adapted, as an elective, for those who have completed the Sophomore Latin of the regular Academic A. B. course. *Six weeks, beginning June 7.* Mr. Catron.

2 and 3. The regular Freshman and Sophomore work (see page 59.) *Six weeks, beginning June 7.* Mr. Catron.

4. Elementary courses in Latin, preparing for entrance examination. *Six weeks, beginning June 7.* Mr. Catron.

Texts: Kelsey's Cæsar and Cicero, and Collar and Daniel's First Latin Book (revised edition).

A fee of \$10, due within ten days after entrance, will admit to any one or to all courses. If a course is organized for *one* person, however, special

rates will be charged. The University will credit (of work done during one summer) the amount of four hours (of class-room work) for a single semester.

This will be a good opportunity to make up deficiencies or entrance requirements. Students who wish to make University credits in Latin are strongly advised to concentrate upon the work in that subject.

The above courses will not be given unless at least eight students apply for instruction.

#### MATHEMATICS.

The following courses are offered:

1. Algebra. A review of elementary Algebra. This course will cover as much of this subject as is required for admission to the Freshman Class in the University. Assistant Professor Defoe.

Text: Hall & Knight's Elementary Algebra revised by Sevenoak, to Chapter XXXV.

2. Trigonometry. This course will be the full equivalent of the work in this subject required in the Freshman year. Assistant Professor Defoe.

Text: Bowser's Treatise on Trigonometry.

3. Advanced Algebra. This course will be the full equivalent of the work taught in this subject in the first semester of the Freshman year. Assistant Professor Defoe.

Text: Hall & Knight's Elementary Algebra, beginning with chapter XXXV.

Course 2 or 3 may be counted toward a degree provided the student takes but one of them and passes a satisfactory examination at the close of the term.

All courses begin June 7 and close July 17.

Tuition for one course, \$10; for two or more courses, \$15.

Courses 1 and 3 are recommended to teachers.



## APPENDIX II.

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### ENDOWMENT AND FREE SCHOLARSHIPS.

(Introduced by Senator Charles E. Yeater, in the 38th General Assembly.)

*AN ACT providing for the endowment of the State University, and for the establishment and endowment of Free Scholarships of merit therein in each county.*

(As amended by the Acts of 1897.)

*Be it enacted by the General Assembly of the State of Missouri, as follows:*

SECTION 1. All property conveyed by will, or by the death of an intestate, or by deed, grant, bargain, sale or gift, made or intended to take effect in possession or enjoyment after the death of the grantor, or bargainer, or any person or persons, either directly or in trust or otherwise, whereby a beneficial interest shall be created in possession or expectancy to any property, or the income thereof, to any persons other than the father, mother, husband, wife or direct lineal descendant of the testator, intestate, grantor or bargainer, except property conveyed for some educational, charitable or religious purpose exclusively, shall be subject to the payment of a collateral succession tax of five dollars for each and every one hundred dollars of the clear market value of such property, and such value shall be fixed by the probate court, on motion of any person, or on its motion, or by the judge thereof in vacation, and such shall be the duty of the probate court and of the judge thereof; and for the enforcement and collection of such tax, there is hereby created against the property affected thereby a first lien in favor of the state of Missouri, upon which a civil action may be prosecuted in any court having competent jurisdiction; and when collected, such tax shall be paid into the county treasury of the county where the testator, intestate, grantor or bargainer resided, or in the case where there is no such residence in the state, then such tax shall be paid into the county treasury of the county where such property exists or is situate. All taxes provided by this section, which shall not be paid within one year after the death of the person rendering such property subject to taxation, shall bear interest at the same rate, from the date of the death of such person, as is now provided by law for delinquent taxes, and suits therefor may be prosecuted by the same person provided by law for the purpose of instituting suits for delinquent taxes, unless the county court

shall make an order requiring the prosecuting attorney to institute suits for the recovery of such collateral succession taxes: Provided, however, that upon application and for good cause shown, the probate court, or the judge thereof in vacation, may make necessary extensions of time for the payment of such taxes, but no single extension shall exceed one year.

SECTION 1a. It shall be the duty of the probate judge of each probate court in this state, whenever the inventory and appraisement of any estate is filed in their court, which is subject to the payment of a collateral succession tax, as provided for in section 1 of this act, to immediately levy upon and charge such estate with the amount of such collateral succession tax, and require the executor, administrator or beneficiary of such estate to pay the same within one year thereafter, and if the executor, administrator or beneficiary of such estate shall fail or refuse to pay such tax within one year, then it shall be the duty of the probate judge to certify under the seal of his court, to the collector of the revenue in the county or city within the jurisdiction of said probate court, all such delinquent taxes; such certificate shall set forth the name of the testator or intestate, the kind of property, its market value upon which the tax was levied, the name of the executor, administrator or beneficiary, and the amount of tax levied and remaining delinquent; and the collector of the revenue, upon the receipt of such certificate, shall immediately proceed to collect the same as provided for in section 1 of this act. It shall be the duty of the probate judge and collector of the revenue to pay over to the county treasurer, monthly, all such taxes collected by them, taking duplicate receipts therefor, one of which receipts they shall file with the county clerk, who shall charge the treasurer therewith.

SECTION 2. In addition to the fees now provided by law, no corporation or association, other than those formed for benevolent, religious, scientific, fraternal-beneficial or educational purposes, shall be created or organized under the laws of this state, and no foreign corporation shall do business in this state unless the persons named as incorporators or the corporation shall, at or before the filing of the articles of association, or incorporation, pay to the state treasurer, in trust for the state of Missouri, to be disposed of as hereinafter provided in this act, the sum of twenty-five hundredths of a dollar for every thousand dollars of the capital stock of such corporation or association as a franchise fee, and a like franchise fee shall be paid in the same manner on every thousand dollars of the increase of the capital stock of any corporation or association.

SECTION 3. Every manufacturer of medicines or remedies, commonly known as patent medicines, shall annually pay a license tax of twenty-five dollars, and every traveling vender of such medicine or remedies shall pay a license as now provided by law; and every such traveling vender shall take out a license in every county in which he vends such articles. Every manufacturer or traveling vender failing to pay the license tax provided

by this section shall be guilty of a misdemeanor, and upon conviction, be punished by a fine not to exceed one hundred dollars; and all such fines shall be paid into the fund hereinafter provided.

SECTION 4. All moneys which may hereafter escheat to the state, after all claimants are barred by the statute of limitations, shall be distributed in the manner provided by this act to the "seminary fund" and the "state university scholarship fund" of the county from which in each instance such moneys escheated.

SECTION 5. All taxes or fees or moneys collected or received under the provisions of this act during each month by any county official, and for the purpose of this act the city of St. Louis shall be affected through its corresponding officers as if it were a county, shall be paid during the first week of the following month to the county treasurer, who shall thereupon credit three-fourths of the moneys so received to a fund hereby created, to be known as "the state university scholarship fund," and remit the remaining one-fourth to the state treasurer; and from all taxes and fees received from corporations, and all escheats received under the provisions of this act, the state treasurer shall, monthly, in the same manner, reserve one-fourth, and remit the remaining three-fourths to all the county treasurers of the state, and the treasurer of the city of St. Louis, to be credited to "the state university scholarship fund" of such counties and city, in such manner as to give to each that number of one hundred and fortieths of such remaining sum, which may equal the number of representatives that his respective county or city may have in the house of representatives of the general assembly.

SECTION 6. All moneys received by the state treasurer to be retained by him under the provisions of this act shall be deposited in the state treasury to the credit of the "seminary fund," as provided by section eight thousand eight hundred and twenty (8820) of the Revised Statutes of 1889; and upon the issue of a certificate or certificates under the provisions of such section and other sections of chapter one hundred and sixty-seven (167) of the Revised Statutes of 1889, such moneys shall be paid in amounts corresponding thereto into the state interest fund, and the proper entries in accordance therewith, shall be made by the state treasurer on the books of the treasury.

SECTION 7. All moneys received by the county treasurer of each county to be credited to "the state university scholarship fund," shall be forever kept and preserved as a sacred permanent fund; and it is hereby made the duty of the several county courts of this state, and of the mayor, auditor and treasurer in the city of St. Louis, to invest and loan said moneys in the manner provided by law for the loan of county school funds, or to invest such moneys in the bonds of the United States, the state of Missouri, or the bonds of any county or municipal corporation in the state, which the governor, attorney-general and state treasurer shall, in writing, on a request

from any county court, pronounce in their opinion to be legal and valid and proper investment securities.

SECTION 8. The income of the moneys in "the state university scholarship fund" shall be collected annually, and one-fourth of the same added to the principal, and the remaining three-fourths shall be faithfully appropriated for establishing and maintaining free scholarships in the state university, the amounts and terms of which shall be fixed and changed from time to time, as may be necessary, on the written order and resolution of the board of curators of the state university.

SECTION 9. On the first week in August in each year, beginning with the first Monday after due notice thereof, as prescribed by the county court, in two newspapers in each county, representing different political parties where such newspapers exist, there shall be held at the courthouse, in the county seat, an examination of all applicants qualified under the law to be students of the university. Such applicants shall be actual residents of the county, and such examination shall be conducted by three examiners, one of whom shall first be appointed by written notice to the county clerk by the president of the board of curators of the university during the month of July, and one selected thereafter by the county court, of another political faith, and the third selected by the agreement of the two so chosen, with power in the county court, or the presiding judge thereof in vacation, to fill all vacancies in the position of examiner; and such examinations shall be written; and shall meet the requirements for entrance in the academic department of the university: Provided, that the duties imposed on county courts or the judges thereof, by this section, shall be discharged in the city of St. Louis by the mayor.

SECTION 10. Those applicants passing the best and most meritorious examinations, to the number of scholarships established in each respective county, shall be awarded such scholarships, and be entitled thereon to enter free of matriculation fees any department, school or college of the university, and have paid to them in equal monthly installments, while attending the university, the sum provided by the scholarship so awarded, for defraying the expenses of such attendance: Provided, that no applicant shall be qualified to receive such scholarship unless such examiners shall be satisfied that the applicant is dependent upon his own exertions for his education, and financially unable to otherwise obtain the same.

SECTION 11. The cost of publishing the notices of examination, and a reasonable compensation to the examiners, to be fixed by the county court, shall be paid out of the annual income of "the state university scholarship fund," but no other expense of any nature whatsoever shall ever be paid out of such annual income.

SECTION 12. All statutes, acts or parts of acts inconsistent with this act are hereby repealed.

# INDEX.

|                                   | Page     |                                     | Page     |
|-----------------------------------|----------|-------------------------------------|----------|
| Academic Department.....          | 38- 74   | Degrees.....                        | 24       |
| Admission.....                    | 41- 43   | Geology.....                        | 125      |
| Approval of Schools.....          | 45- 50   | Horticulture.....                   | 115      |
| Approved Schools.....             | 51- 52   | Mathematics.....                    | 123      |
| Courses.....                      | 53- 56   | Mechanic Arts.....                  | 120      |
| Degrees.....                      | 24       | Military Science.....               | 122      |
| Faculty.....                      | 38- 40   | Physics.....                        | 124      |
| Fees.....                         | 22       | Political Economy.....              | 123      |
| Studies.....                      | 57- 74   | Veterinary Science.....             | 119      |
| Archæology, Classical.....        | 61       | Alumni.....                         | 30       |
| Astronomy.....                    | 67       | Anatomy.....                        | 93       |
| Biology:                          |          | Approval of Schools.....            | 45- 52   |
| Animal Physiology.....            | 72       | Approved Schools.....               | 51- 52   |
| Bacteriology.....                 | 73       | Astronomy.....                      | 67       |
| Botany.....                       | 73       | Athletics.....                      | 28, 37   |
| Entomology.....                   | 73       | Athletic Association.....           | 30       |
| Zoology.....                      | 72       | Bacteriology.....                   | 73, 98   |
| Chemistry.....                    | 70       | Biology.....                        | 72       |
| English.....                      | 57       | Board of Visitors.....              | 8        |
| Geology and Mineralogy.....       | 71       | Board.....                          | 23, 36   |
| Germanic Languages.....           | 63       | Botany.....                         | 73, 125  |
| Greek.....                        | 60       | Buildings and Equipment.....        | 15- 18   |
| History.....                      | 64       | Cadetships.....                     | 27       |
| Latin.....                        | 59       | Calendar.....                       | 24       |
| Mathematics.....                  | 66       | Certificates.....                   | 18       |
| Philosophy.....                   | 65       | Chapel services.....                | 70, 124  |
| Physics.....                      | 69       | Chemistry.....                      | 70, 124  |
| Political Economy.....            | 65       | Christian Associations:             |          |
| Romance Languages.....            | 62       | Young Men's.....                    | 29       |
| Admission to the University:      |          | Young Women's.....                  | 30       |
| Academic Department.....          | 41- 43   | Classical Archæology.....           | 61       |
| Agriculture, School of.....       | 107      | Class Honors.....                   | 21       |
| Engineering, School of.....       | 129      | Climatology.....                    | 125      |
| Graduate Department.....          | 45, 146  | Club-houses.....                    | 18, 36   |
| Law.....                          | 80- 82   | College of Agr. and Mech. Arts..... | 100- 145 |
| Medical.....                      | 90       | Departments.....                    | 105      |
| Military Science and Tactics..... | 95       | Faculty.....                        | 100- 103 |
| Normal Department.....            | v1       | Historical Statement.....           | 103- 104 |
| From Approved Schools.....        | 45       | Commercial Studies.....             | 121      |
| Advanced Standing.....            | 44       | Counties represented.....           | 169      |
| Agricultural Chemistry.....       | 119      | Curators.....                       | 8        |
| Agriculture, School of.....       | 105- 125 | Date of Meeting.....                | 111      |
| Admission.....                    | 107      | Officers.....                       | 8        |
| Courses.....                      | 107- 111 | Report to Governor.....             | 1- 7     |
| Experiment Station.....           | 142- 145 | Curators' Scholarships.....         | 25       |
| Faculty.....                      | 105- 106 | Departments of the University.....  | 38       |
| Studies.....                      | 112- 125 | Academic.....                       | 38- 74   |
| Agriculture.....                  | 112      | Agr. & Mech. Arts, College of.....  | 100- 145 |
| Agric. Chemistry.....             | 119      | Agriculture.....                    | 105- 125 |
| Botany.....                       | 125      | Engineering.....                    | 129- 136 |
| Chemistry.....                    | 124      | Mechanic Arts.....                  | 126- 127 |
| Climatology.....                  | 125      | Mines and Metallurgy.....           | 136- 142 |
| Commercial Studies.....           | 121      | Law.....                            | 80- 87   |
| Drawing.....                      | 121      | Medical.....                        | 89- 94   |
| English.....                      | 123      | Military Science and Tactics.....   | 95- 99   |
| Entomology.....                   | 118      | Normal.....                         | 75- 79   |





3 0112 105734740

|  | Page      |   | Page                           |
|--|-----------|---|--------------------------------|
| Directions for new Students              | 20        | Studies                                 | 91-94                          |
| Discipline                               | 19        | Military Science and Tactics department | 95-99                          |
| Doctor of Philosophy or Science          | 147       | Admission                               | 95                             |
| Drawing                                  | 121       | Course                                  | 96-97                          |
| Elocution                                | 74        | Regulations                             | 98                             |
| Endowment law                            | 183       | Cadet officers                          | 95                             |
| English                                  | 57, 123   | State Cadets, appointment of            | 97                             |
| Engineering, School of                   | 127-136   | Supplies, general                       | 96                             |
| Admission                                | 129       | Uniforms                                | 96                             |
| Civil Engineering                        | 130       | Mines and Metallurgy, School of         | 35-37, 136-142                 |
| Courses                                  | 130-135   | Buildings and Equipment                 | 35-36                          |
| Degrees                                  | 129       | Courses                                 | 138-149                        |
| Electrical Engineering                   | 132       | Academic                                | 141                            |
| Faculty                                  | 128       | Chemistry and Metallurgy                | 139                            |
| Mechanical Engineering                   | 134       | Civil Engineering                       | 139                            |
| Surveying                                | 132       | Mining Engineering                      | 139                            |
| Enrollment in all departments            | 167-169   | Degrees                                 | 138                            |
| Entomology                               | 118       | Expenses                                | 36                             |
| Examinations                             | 21, 37    | Faculty and officers                    | 136                            |
| Entrance                                 | 41-44     | Museums:                                |                                |
| Expenses                                 | 22, 36    | Agriculture                             | 114                            |
| Experiment Station                       | 142-145   | Biology                                 | 73                             |
| Faculty, General                         | 9-13      | Classical Archæology                    | 61                             |
| Farm, Agricultural College               | 114       | Musical clubs                           | 30                             |
| Farmers' Winter Courses                  | 107-108   | Normal Department                       | 75-79                          |
| Fellowships                              | 27        | Admission                               | vi                             |
| Fees and deposits                        | 22        | Certificates                            | 77                             |
| Free tuition. See Curators' Scholarships |           | Courses                                 | 77-79                          |
| Geology and Mineralogy                   | 71, 125   | Degree                                  | 79                             |
| Germanic Languages                       | 63        | Faculty                                 | 75-76                          |
| Gifts to the University                  | 32-35, 36 | Spring courses                          | 79                             |
| Graduate Department                      | 146-152   | Summer courses                          | 79                             |
| Academic                                 | 146-151   | Observatory                             | 68                             |
| A. and M.                                | 151       | Omissions, and Corrections              | vi                             |
| Law                                      | 151       | Officers                                | 13                             |
| Graduate students                        | 45, 146   | Philosophy                              | 65                             |
| Graduates of Approved Schools            | 45        | Physical Culture                        | 28                             |
| Graduates of 1896                        | 171       | Physics                                 | 69, 124                        |
| Greek                                    | 60        | Physiology                              | 72, 92                         |
| Gymnasium                                | 28        | Political Economy                       | 65, 123                        |
| History                                  | 64        | Preachers and Lecturers                 | 14                             |
| Honorary Degrees                         | 24        | Prizes                                  | 25                             |
| Horticulture                             | 115       | Publications, students'                 | 28                             |
| Laboratories                             | 17        | Religious exercises                     | 18                             |
| Latin                                    | 59        | Rollins Aid Fund                        | 26                             |
| Law Department:                          |           | Rollins Scholarships                    | 26                             |
| Admission                                | 80-82     | Romance Languages                       | 62                             |
| Advantages                               | 87        | Schemes of Studies                      | 54, 90, 110, 130-135, 139, 142 |
| Courses                                  | 83-85     | Scholarship Act (Yeater)                | 183                            |
| Degrees and Honors                       | 86-87     | Scholarships, free                      | 25                             |
| Faculty                                  | 80        | Scholarships, Rollins prize             | 26                             |
| Fees                                     | 22        | Shops                                   | 126                            |
| Methods of Instruction                   | 85        | Societies                               | 28-31, 37                      |
| Lectures                                 | 14        | Special Students                        | 44                             |
| Libraries                                | 17, 36    | Students, list of                       | 153-167                        |
| Literary societies                       | 28, 37    | Academic                                | 153                            |
| Mathematics                              | 66, 124   | Agriculture                             | 161                            |
| Master of Arts                           | 146       | Engineering                             | 163                            |
| Mechanic Arts                            | 120       | Law                                     | 158                            |
| Mechanic Arts, School of                 | 126-127   | Medical                                 | 160                            |
| Courses                                  | 127       | Mines and Metallurgy                    | 164                            |
| Facilities                               | 126       | Normal                                  | 157                            |
| Instructors                              | 126       | Summer School                           | 166                            |
| Medical department                       | 89-94     | Studies, Regulations in regard to       | 20                             |
| Admission                                | 90        | Stephens Medal                          | 25                             |
| Course                                   | 90-91     | Summaries                               | 167-170                        |
| Degrees and Certificates                 | 94        |   |                                |
| Faculty                                  | 89        |   |                                |